AMERICAN BEE JOURNAL

AUGUST, 1917

Nearly Every Walk of Life is Represented in Beekeeping. The Above is the Model Apiary of Dr. F. C. Smith Located at Keokuk, Iowa. There is no Trouble in Selling Honey at This Apiary. The Trade Demands More Than Can be Supplied.

"When we receive your Honey
Return mail brings your Money"
The Fred W. Muth Co.

GET SERVICE LIKE THIS MAN

LAKE CITY, MICH., MAY 5th, 1917.

FRIEND MUTH:—Your letter with check for $146.20 for wax has been received. Thanks. I do believe you beat them all when it comes to quick returns for goods shipped you. I may have some more wax to sell after we get our cappings melted.

Yours truly, [SIGNED] ELMER HUTCHINSON.

We Want Immediately! Extracted Honey

We buy all grades of Extracted Honey. Large or small lots. Send sample and price. If price is right, we will buy. Partie who have Fancy and Number One Comb Honey write us at once. We will buy from 40 to 50 carloads this season.

BEESWAX

Send us your Beeswax. We pay highest market prices, and send you our check the same day shipment is received.

OLD COMBS

Make some spare money from the wax rendered from your old comb We will render it, charging only 5 cents per pound for rendering, and pay you best market prices for the wax rendered.

Shipping Cases for Comb Honey

We are prepared to ship you the same day order is received any number of shipping cases. Several carloads are here now ready for buyers. Send your order in now before our supply is exhausted. We sell Lewis Beeware.

REMEMBER We remit the same day your shipment arrives. Read the letter above and be convinced that this is the house to send your shipments to. Try us.

THE FRED W. MUTH CO.
"The house the bees built"
204 Walnut St., Cincinnati, Ohio

BEES AND QUEENS, GOLDENS AND LEATHER COLORED FOR 1917

Canadian and United States Trade

We are now booking deliveries in June and July at the following prices, viz.:

FROM PENN, MISS.

Prices 1 and over	1	6	12	25 to 100
Untested	$ .85	$4.50	$8.00	$ .65 each
Warranted	1.10	5.00	9.50	.75 "
Tested	1.50	7.50	13.50	1.05 "
Breeders	3.00 to $10.00 each.			

FROM TORONTO, ONTARIO.

1	6	12	25 to 100
$1.00	$4.80	$ 9.25	$ .75 each
1.35	5.80	10.75	.85 "
1.75	7.80	14.75	1.15 "
3.00 to $10.00 each.			

POUND PACKAGES WITH UNTESTED QUEENS

FROM PENN, MISS.

	1 to 5 each	6 to 25 each	over each
1-pound and Queen	$2.25	$2.00	$1.90
2-pound and Queen	3.00	2.75	2.65

FROM TORONTO, ONTARIO

1 to 5 each	6 to 25 each	50 over each
$3.00	$2.75	$2.65
4.50	4.25	4.00

Prices on full colonies and nuclei quoted on request.

We supply THE ROOT CANADIAN HOUSE, 54 WOLSELEY ST., TORONTO, ONTARIO, CANADA, with large shipments almost daily during the above months, frequently moving almost a car of packages to them at a time. This is the most successful way of serving Canadian trade. This firm has our entire Agency for the Dominion, and all Canadian business should be addressed to them unless you wish shipments made direct from Penn, Miss., address us

At the time of booking order, remit 10 percent as a form of good faith on your part with balance to be remitted a few days prior to date of shipment. We move orders promptly. Our references, any Mercantile Agency, The A. I. Root Co., or American Bee Journal.

When you deal with us it means satisfaction. Health Certificates furnished with each and every shipment of bees. This assures you that no delays will take place. Safe delivery guaranteed. If interested in bee-hive material, our catalog will be sent on request.

THE PENN COMPANY, PENN, MISS., U. S. A.

BEES

If you are thinking of buying bees this spring, we would be pleased to hear from you. We furnish full and nucleus colonies, bees by the pound, and queens.

A strong colony of Italian bees with a tested Italian queen, in a new 8-frame dovetail hive, complete with super, for $11.00 Tested Italian queens, $1.50. Untested, $1.10.

Our catalog of bee supplies, honey jars, and everything a beekeeper uses, mailed upon request.

I. J. STRINGHAM
105 Park Place, New York
Home Apiary: Glen Cove, L. I.

WESTERN BEEKEEPERS!

We handle the finest line of Bee Supplies. Send for our 68 page catalog. Our prices will interest you.

The Colorado Honey-Producers' Association
1424 Market Street, Denver, Colo.

BEE-SUPPLIES

Let Us Figure With You

We know we can satisfy you on price and quality. Write for catalog.

C. C. Clemons Bee-Supply Co.
Dept. S., Kansas City, Missouri

SELECT ITALIAN BEES

by the pound. Nuclei QUEENS. 1917 prices on request. Write,

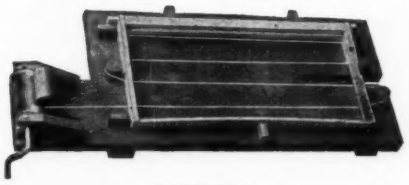
J. B. HOLLOPETER, Rockton, Pa.

CASH paid for butterflies, insects. Some $1 to $7 each. Easy work. Even two boys earned good money with mother's help and my pictures, descriptions, price list, and simple instructions on painlessly killing, etc. Send 2c stamp at once for prospectus.
SINCLAIR, Box 244, D 41, Los Angeles, Cal.

Poultry Supplies

Poultry supplies of all kinds, best automatic grain feeders, fountains, feed troughs, dry mash hoppers, bone mills, exhibition and shipping coops, leg bands, shell, grit, bone, meat, foods, and remedies ANYTHING YOU WANT. Also Pigeon, Kennel and Bee Supplies. Circular free.

Eureka Supply House
Box B-403, - Aurora, Illinois



PATENTED
WRIGHT'S FRAME-WIRING DEVICE

Most rapid in use. Saves cost of machine in one day. Tighter wires, no kinks, no sore hands. Price, $2.50, postpaid in U. S A.
G. W. Wright Company, Azusa, Calif.

Gray Caucasians

Early breeders; great honey gatherers; cap beautifully white, great comb builders; very prolific; gentle; hardy; good winterers. Untested, $1.00. Select untested, $1.25. Tested, $1.50 Select Tested, $2.00. The best all-purpose bee.

H. W. FULMER, Point Pleasant, Pa.

FILMS DEVELOPED

All roll films developed for 10 cents. We return them the same day. Everything in the KODAK Line. Send for catalog.

F. M. ALEXANDER
Atlantic, Iowa

3-BANDED ITALIANS

From May 1 until June 1
Untested, $1 00; 6, $4.50; 12, $8.00. Tested, $1.25; 6, $5.50; 12, $10.50

From June 1 until Nov. 1
Untested, 75c; 6, $4.00; 12, $7 50. Tested, $1.00; 6, $5.00; 12, $9.00. Select tested $2.00 each. Circular free.

JOHN G. MILLER
723 C St., Corpus Christi, Texas

NEW BINGHAM BEE SMOKER

In 1878 the original direct draft bee smoker was invented and patented by Mr. T. F. Bingham, of Michigan. Mr. Bingham manufactured the Bingham Smoker and Bingham Honey Knife for nearly thirty-five years, and in 1912 becoming a very old man, we purchased this business and joined it to our established business of beekeepers' supplies and general beeware. Those who knew Mr. Bingham will join us in saying that he was one of the finest of men, and it gives us much pleasure to help perpetuate his name in the beekeeping industry.

Bingham Smokers have been improved from time to time, are now the finest on the market, and for nearly forty years have been the standard in this and many foreign countries. For sale by all dealers in bee supplies or direct from the manufacturers.

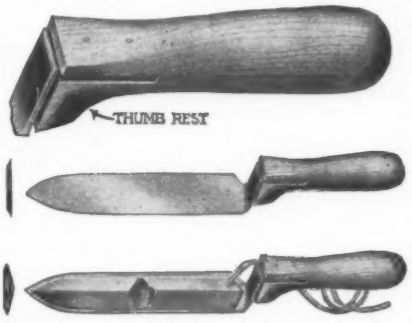
Smoke Engine, 4-inch stove	28 oz	$1 25
Doctor, 3½ inch stove	26 oz.	85
Two larger sizes in copper extra		
Conqueror, 3-inch stove	23 oz.	.75
Little Wonder, 2½-inch stove	16 oz	.50

Hinged cover on the two larger sizes, postage extra.

A. G. WOODMAN CO., Grand Rapids, Michigan

Bingham Honey Uncapping Knives
With New Cold Handle

We are furnishing the same quality steel, best money can buy, thin-bladed knives that Mr. Bingham manufactured years ago. The old timers all remember these knives and many are writing in as Mr. Volstad in the following letters. The substitutes offered by others have not given the satisfaction desired.



Lyle, Minn., June 21, 1917.
A. G. Woodman Co.
Gentlemen: Have you the thin, good working uncapping knives we used to get about 20 years ago and that worked to perfection?
K. H. VOLSTAD.

We sent an 8½ and 10-inch knife and received the following letter:

Lyle, Minn July 5, 1917.
A. G. Woodman Co.
Gentlemen: Knives received; glad you sent them at once. They are just what I want and have been looking for, but did not know where to get them.
K. H. VOLSTAD.

Many of the most extensive honey producers insist on the Genuine Bingham Knives. Mr. N. E. France, of Platteville, Wis., gave us a fine unsolicited testimonial on the steam heated Bingham knife, too long for this space. Present prices are: 10-inch knives, 85 cents each; 8½-inch knives, 75 cents each. Steam heated knives, with tubing, $2.50 each. Postage extra.

A. G. WOODMAN CO., Grand Rapids, Mich.

TIN HONEY PACKAGES

The tin plate situation is becoming more serious from day to day and prices have taken a steady advance for the last year and a half. Prices still continue to advance slowly and at the present time it is almost unobtainable. We purchased enough tin plate for our bee smoker trade to last us a year or more, before the war was declared. It would be a hard matter for us to get it at any price now. Our three-year contract on tin honey packages is still being honored and runs to Jan. 1, 1919. Prices are adjusted every three months, but we are considerably under present market prices and are saving for carload buyers and others of smaller lots. Send us a list of your requirements and let us figure with you.

Friction Top Tins

	2-lb. Cans.	2½-lb. Cans.	3-lb. Cans.	5-lb. Pails.	10-lb. Pails
Cases holding	24	24	.....	12	6
Crates holding	.....	.....	.....	50	50
Crates holding	100	.....	100	100	100
Crates holding	603	450	.....	203	113

A. G. WOODMAN CO., Grand Rapids, Michigan

Dr. Miller's Thousand Answers

Postpaid $1.25

THE GUARANTEE THAT MADE "falcon" Bee Supplies Possible

The "falcon" GUARANTEE. Every hive, every super, every crate of sections, every pound foundation every article, and every queen leaving the "falcon" plant goes out with our "absolute satisfaction or money back" guarantee. For more than a third of a century we have stood behind everything we sell. If anything is wrong or not just what you thought it would be, we'll appreciate it if you write us, and we'll make it absolutely right at our expense. Our satisfied customers are to be found everywhere and are our best advertisement. "Once a customer always a customer," is synonymous with the name "falcon"

The beekeepers' past experience when "short" should have taught him that it's a "wise move" to get hives, sections and supplies ready in the next two months. We will be glad to quote on "falcon" supplies if you will send us an approximate list of what you will require for the coming season.

Red Catalog, Postpaid **Dealers Everywhere** **"Simplified Beekeeping," Postpaid**

W. T. FALCONER MFG. CO., Falconer, New York

Where the good bee-hives come from

NOTICE

HONEY WANTED HONEY

Do not forget when your crop of honey is ready for sale to send us a sample, state your lowest price, and also how it is put up. We are in the market for unlimited quantities, and will pay cash on arrival. Let us hear from you before selling your crop.

C. H. W. Weber & Company

2146 Central Ave., - Cincinnati, Ohio

Tennessee-Bred Queens

45 Years' Experience in Queen-Rearing

Breed 3-Band Italians Only

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested.....	$1.50	$ 7.50	$13 50	$1.25	$ 6.50	$11.50	$1.00	$ 5.00	9.00	$ .75	$ 4.00	$ .75
Select Untested..	2.00	8.50	15.00	1.50	7.50	13.50	1.25	6.50	12.00	1.00	5.00	9.00
Tested.....	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
S lect Tested....	3.00	16.50	30 00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	10.00	18.00

Nuclei (no queen) 1 fr., $1 50; 2 fr., $2.15; 3 fr., $2.75; 4 fr., $3.50; pure 3-band Italians. Select queen wanted, add price.

Capacity of yard, 5000 queens a year

Select queen tested for breeding, $5.00

The very best queen tested for breeding, $10.00

JOHN M. DAVIS, SPRING HILL, TENN.

3-BAND ITALIAN QUEENS

Produce Workers

That fill the super quick with honey nice and thick. They have won a world wide reputation for honey gathering, hardiness and gentleness. Untested, 40c; 6, $2.25; 12, $4 00. Tested, 75c; 6, $4.00; 12, $7.50 We guarantee safe arrival and satisfaction.

S. D. CHEATHAM & CO.

Rt. 4, Greenville, Ala.

The apiaries for queens of dependable quality

POULTRY, FRUIT, BEE PAPER COMBINATION $1.50

Poultry and Fruit are allied pursuits for the beekeeper. Here is a special combination of three papers which gives excellent reading at a low cost:

The Fruit Grower..... .50
American Poultry Advocate..... .50
American Bee Journal..... $1.00

Our price for all three for one year is only $1.50. Or if you want two poultry papers, add 25c to the above offer and get your choice of the following one year:

Reliable Poultry Journal, Poultry Success American Poultry World, Big Four Poultry Journal, Poultry Tribune, Poultry Item.

Send all orders to

AMERICAN BEE JOURNAL, Hamilton, Ill.

GOLDEN ITALIAN QUEENS

Read a few reports of big yields from single colonies of this gentle strain of Goldens: H. E. Bartz, Keytesville Mo., 264 pounds of extracted honey; J. M. Buchanan, Franklin, Tenn, 250 pounds of extracted honey; L. C. McCarty Nampa, Idaho, 250 pounds of comb honey; Fred Dury, Unionville, Mo., 374 pounds of comb and extracted honey.

I guarantee safe arrival (U. S. and Canada), purity of mating and satisfaction. Write for circular.

—Prices of Queens—

	Nov. 1 to May 1			May 1 to June 1			June 1 to July 1			July 1 to Nov. 1		
	1	6	12	1	6	12	1	6	12	1	6	12
Untested	$1.50	$ 7.50	$13.50	$1.25	$ 6.50	$11.50	$1.00	$ 5.00	$ 9.00	$ .75	$ 4.00	$ 7.50
Select untested	2.00	8.50	15.00	1.50	7.50	13.50	1.25	6.50	12.00	1.00	5.00	9.00
Tested	2.50	13.50	25.00	2.00	10.50	18.50	1.75	9.00	17.00	1.50	8.00	15.00
Select tested	3.00	16.50	30.00	2.75	15.00	27.00	2.50	13.50	25.00	2.00	10.00	18.00

Select queen tested for breeding, $5.00. - The very best queen tested for breeding, $10.00

BEN G. DAVIS, Spring Hill, Tennessee

FOREHAND'S QUEENS

15 LBS. SURPLUS — *Which Colony is Yours, Mr. Beekeeper?* — 150 LBS. SURPLUS

GET A GOOD QUEEN

One that will keep the hive chock-full of bees at all times, make the biggest yields of honey, stingless, and look the prettiest at a medium price. Over 25 years of select breeding has brought our queens up to a standard surpassed by none and superior of many. We have tried the principal races and every method known, and we have now selected the best of both. THE DOOLITTLE METHOD and the THREE-BAND BEES. Use the 3 Bands Why? Because they get results. The foremost bee-men of the world use them. Our queens are sold by many of the largest dealers in the United States.

Louis H. Scholl (one of the largest beekeepers of the Southwest) says: "Three-band Italians have proven the best all-round purpose bee after trying out nearly every race, not only in an experimental way while still at A. M. College, but in our own apiaries as well."—(*In Beekeepers' Item.*)

	1	6	12		1	6	12
Untested	$ .50	$ 3.00	$ 6.00	Tested	$1.50	$ 8.75	$17.00
Select untested	.75	4.25	8.00				

Write for prices on large quantities

W. J. FOREHAND & SONS, Ft. Deposit, Ala.

TYPEWRITER SENSATION

$2.50 A Month Buys L. C. Smith Visible Writing

Perfect machines only of standard size with keyboard of standard universal arrangement—has Backspacer—Tabulator—two color ribbon—Ball Bearing construction—every operating convenience. **Five Days' Free Trial.** Fully guaranteed. Catalog and special price free.

H. A. SMITH, 314—231 North Fifth Avenue, Chicago, Illinois

QUEENS OF QUALITY

Capacity of my yards over 1000 Queens a month

After 20 years of careful selection and breeding, I now have a strain of bees that cannot be excelled by any. My queens are all bred from IMPORTED STOCK, the very best in the world for honey gathering and gentleness. They are not given to swarming. What more do you want in bees than the three above qualities?

G U A R A N T E E

You take no risk in buying my queens, for I guarantee every queen to reach you in first-class condition, to be purely mated and to give perfect satisfaction. All queens that do not give satisfaction I will replace. Send for circular.

	1	6	12
Untested	50c each.		
Select untested	.75	4.25	8.00
Tested	1.25	7.00	13.00
Select tested	2.00	11.00	20.00

If queens are wanted in large quantities, write for prices.

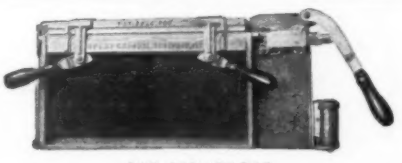
L. L. FOREHAND, Ft. Deposit, Alabama

TEXAS QUEENS

Golden and 3-Banded Italians and Carniolans, fine workers. Queens, 75 cts. each; $8.00 per doz. Bees in pound packages, $1.25; 2-lb. pack. $2.25. Your satisfaction my object.

GRANT ANDERSON

Rio Hondo, Texas



PAT. APPLIED FOR

C. O. BRUNO NAILING DEVICE

Made for the Huffman Brood Frames. A combined Nailing, Wiring and Wedge Clamping Device. Does the work in half the time. Has been tried and is guaranteed to do accurate work. Makes the frames ready in one handling. Price $6.50.

Complete directions for operating are furnished with each device.

Manufactured by C. O. BRUNO
1413 South West Street, Rockford, Illinois

EVERY BEEKEEPER KNOWS

The worth of a *good* queen, the worth of a *good* strain of bees- and also knows how *worthless* is a poor queen and inferior bees. Try our strain of three-band Italians; they will not disappoint you. Vigorous, prolific queens; bees that get the honey. *Another* thing, no *disease* in this locality. Tested queens of last fall rearing by return mail. $1.00 each. Untested queens, single queen, $1.00; $9.00 per dozen.

J. W. K. SHAW & CO.
Loreauville, Louisiana

SAVE MONEY

By buying your supplies of me. All kinds of Bee Supplies and Berry Baskets, Crates, etc. Send for new **1917** list free.

W. D. SOPER
325 So. Park Ave., Jackson, Mich.

LEWIS BEEWARE

Is at your very door

Send to Your Nearest Lewis Distributer for

LEWIS HIVES

and

LEWIS SECTIONS

Hold to the "Beeware" Trade Mark

It is Your Safest Guide Post

LEWIS DISTRIBUTERS:

California	—	Bishop,	W. A. Trickey,
Colorado	—	Denver,	Colorado Honey Producers' Ass'n.,
"	—	Delta,	Delta County Fruit Growers' Ass'n.,
"	—	Grand Junction,	Grand Junction Fruit Growers' Ass'n.,
"	—	Rifle,	C. B. Coffin,
Idaho	—	Caldwell,	Idaho-Oregon Honey Producers' Ass'n.,
Illinois	—	Hamilton,	Dadant & Sons,
Iowa	—	Davenport,	Louis Hanssen's Sons,
"	—	Sioux City,	Western Honey Producers' Ass'n.,
"	—	Emmetsburg,	H. J. Pfiffner,
Michigan	—	Grand Rapids,	A. G. Woodman Co.,
Montana	—	Fromberg,	B. F, Smith, Jr.,
New York	—	Newark,	Deroy Taylor Co.,
Ohio	—	Cincinnati,	Fred W. Muth Co.,
Oregon	—	Portland,	Chas. H. Lilly Co.,
Porto Rico	—	Ponce,	Prats & Vicens,
Tennessee	—	Memphis,	Otto Schwill & Co.,
Texas	—	San Antonio,	Texas Honey Producers,
Washington	—	Seattle,	Chas. H. Lilly Co.,
Wyoming	—	Wheatland,	Fred M. Harter,

G. B. LEWIS CO., Manufacturers, Watertown, Wis.

AMERICAN BEE JOURNAL

Vol. LVII.—No. 8 HAMILTON, ILL., AUGUST, 1917, MONTHLY, 1.00 A YEAR

DEVELOPING THE HOME MARKET

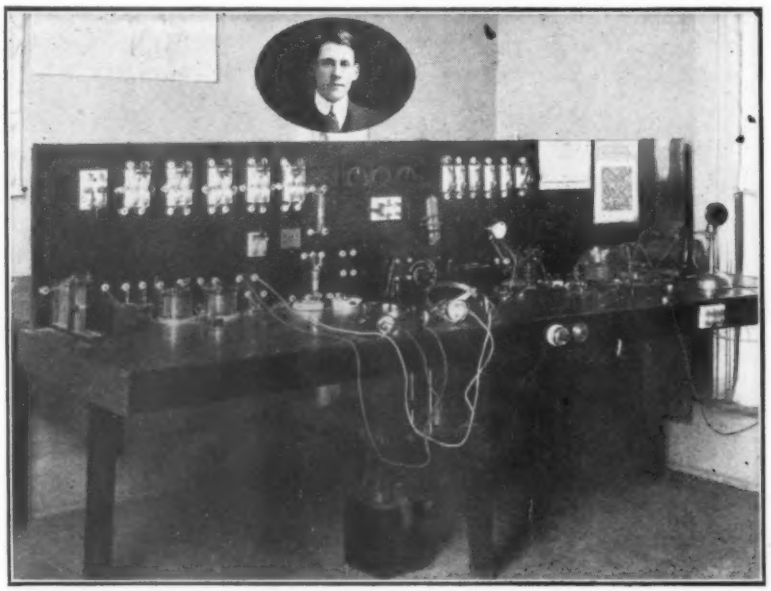
Some Successful Plans of Stimulating the Local Demand for Honey, in Use by Well Known Beekeepers---By Frank C. Pellett

FEW beekeepers realize the possibilities of the local market. Those who do are often able by means of inexpensive advertising to develop a demand for far more honey than they can produce. They thus become buyers, and make a small margin by handling more or less honey in addition to their own crop. After visiting beekeepers in many states, I am more and more impressed with the fact that too many beekeepers are selling their own honey altogether too cheap. Men who should get a fair price often sell at retail at about the wholesale price. I have known men to advertise to sell the best extracted honey at ten cents a pound in any quantity, and to fill fruit jars, pails and other small containers at this price, at a time when large bottling concerns were offering as much in carlots. Until the producer learns to demand a reasonable price for his product, the business can never stand on a firm footing. The beekeeper who enquires what the wholesale price is and then proceeds to sell to his neighbors in small quantities at such a figure is doing all that is within his power to depress the market the following year. If we beekeepers sell our honey at retail at ten cents a pound, we can hardly expect bottlers to offer us more than five or six cents a pound in quantity. They have to pay freights, commissions, and other expenses from the difference between the price which they pay and that for which they sell, and a good business man is not satisfied without a reasonable profit to show for the cost of doing business. The bottler must pay for the bottles, labels, for the labor of packing and handling, and sell to the grocer at a figure that will enable him to make a profit also at the retail price. If we sell at ten cents retail, the grocer is compelled to sell at a similar figure and the producer who does not retail his crop must sell at a price that will allow for all these expenses.

Honey is now worth more money than it has been worth for many years. There are few places where it should sell for less than twelve and a half cents per pound in sixty-pound cans, or fifteen cents per pound in smaller quantities. If the beekeeper is not willing to ask these prices he should in justice to the stability of the market and the good of other beekeepers, sell to a bottling concern at jobbing prices. If a man's time is worth anything he can't afford to retail his honey for less than five cents a pound more than he can get at wholesale.

Raising the Local Price

The above is not written without some knowledge of the difficulties to be encountered in raising the price in a local market, where there are short-sighted beekeepers who insist on selling below the market. When I started to produce extracted honey in my present location there was little demand locally for anything but comb honey. The little extracted honey produced here was sold in small quantity at three pounds for twenty-five cents. In spite of the fact that everybody wanted comb honey and that they were accustomed to buying extracted at less than nine cents per pound, I established a price of 25 cents for a 20-



ARCHIE BANKS AND HIS WIRELESS OUTFIT. A UNIQUE MEANS OF ADVERTISING, AND INCIDENTALLY OF PLACING SOME OF BANKS' HONEY.

ounce jar, 50 cents for a three-pound jar and 12½ cents per pound in lots of 10 to 60 pounds, with price of container additional. At first it looked like it would be hard to make it go, but go it did, and after the first few months the trade has always taken all that I have produced at these prices. Customers have put us in touch with buyers in many distant localities, until we now ship to many states. Since the general market price has raised so much of late our prices are rather low for retail figures at this time, but they seemed high at the time they were established.

At first the local market was almost entirely supplied by John Dufford, a comb honey producer who puts his honey on the market in fine shape, and always gets a fair price. That our competition has not hurt him is best evidenced by the fact that all his crop was sold before Thanksgiving day. The local market has been getting better every year and the people of Atlantic now consume double the amount of honey they did five years ago.

Pellett's honey has been on sale in eight grocery stores in Atlantic this season and they sell large quantities of it. It is not uncommon for some of them to sell ten to twenty dollars' worth in a month. I protect them in their price so that they are able to make about 20 per cent profit on the sales, and that is not any too much for handling it. If a man comes to the house to get honey he pays exactly the same price that he would pay at the grocery store. As a result the grocers like to handle the product and eight of them are able to push it much better than I could do personally. Various plans of advertising have been tried. The best has been a display at the county fair with a large sign "Ask Your Grocer for Pellett's Honey."

The "Every Day is Honey Day" placards advertised in this paper have been used as well as the usual display advertisements in the local papers. Sales to grocers of surrounding towns are beginning to result and present prospects indicate that it would be possible to extend the production of honey indefinitely and sell it all either directly to the consumer or through grocers in western Iowa. We have developed a local market for our own product so far without difficulty.

H. B. MORRISON'S CAR USED FOR HONEY SALES

A Unique Way of Advertising

A most unusual means of advertising is that of Archie Banks, of Delmar, Iowa. Banks makes a hobby of electricity, and has installed a wireless station in his house. At the roadside he has erected a large bulletin board on which he posts important news bulletins, weather forecasts, etc. Farmers driving to town and tourists passing by, stop to read the latest news. In order to call attention of strangers to the board a huge sign is stretched across the road which reads:

"Today's weather report by wireless on next curve. EAT HONEY. For sale here. Archie Banks."

The wireless service, of course, always attracts the attention of the passer-by who wants to know the latest news. The sign calls his attention to the fact that honey is for sale here, and since he has stopped anyway to get the news he might as well take along some honey. This simple means brings enough customers to the Banks' door to take all the honey that his 140 colonies of bees produce. Next season he intends to increase to 200 colonies, as his signs have developed a far larger demand than he is at present able to supply.

While there are few beekeepers who could install a wireless outfit for the purpose of catching the wireless messages from all parts of the world, to interest their neighbors, the big sign across the road could as well call attention of passing tourists that any beekeeper had honey for sale.

ARCHIE BANKS' SIGN ACROSS THE ROAD AT DELMAR, IOWA.

Selling Honey at Farm Sales

F. W. Hall, of Colo, Iowa, is a large producer who frequently has a crop of 40,000 pounds to dispose of. He finds the farm sale to be a splendid place to find a market. At these auctions a cold lunch of sandwiches and coffee is usually served to all who come. Hall takes a bucket of honey and at the lunch hour gives everybody a spread for the buns. Since at this hour there is little counter attraction he makes it a point to offer his five and ten-pound pails of honey, and usually he is able to dispose of a good load in this manner. Aside from his time there is little expense connected with this method of selling. He hands out a sample at the most favorable time. The men are hungry and the free lunch served is of the simplest kind, so that honey is an acceptable addition. Give a hungry man biscuit and honey and if he has a dollar in his pocket the chances are good that he

will exchange it for honey to take home to the family. With an automobile it is an easy matter to attend the farm sales within a radius of fifteen to twenty-five miles of his home. By following up the farm sales during the winter months when he has little other work to do, Mr. Hall is able to market a large part of his honey direct to the consumer, at a minimum of expense.

A somewhat similar plan is that followed by Mr. H. B. Morrison, of Fayette, Iowa. Morrison has a very nice car built especially for a delivery business. In order to reach his customers directly, Morrison advertises to the citizens of the small towns within reach that on a certain afternoon, usually Saturday, when there are more people on the street, he will be there with a load of honey. Packages of various sizes are loaded into the car, so that he is prepared to supply every call, from a pound to a five-gallon can. The number of customers grows with each trip, as the people become acquainted with his product. The nice appearing car is a good advertisement in itself, and he is always surrounded by interested people who are on the watch for the visit of the honey car. Within a radius of twenty-five miles of Fayette there are about twenty-five towns ranging from a few dozen people up to five or six thousand. By making these selling trips at occasional intervals, he is able to find a direct sale for a large quantity of honey. With more honey to sell it would only be necessary to extend the length of his trips and take in other towns a little farther on.

In Memphis, Tenn., last summer, my attention was attracted to a delivery wagon with a honey sign which I at once proceeded to get in range of my camera. Later I learned that Gakler's honey wagon is a familiar sight on the streets of Memphis. He sells to a large extent to the grocery trade.

There are many ways by which the wide-awake beekeeper can call attention to his product and bring buyers to his own door. The poorest way to stimulate trade is by cutting prices, and the man who sells at a price below the general market does an untold injury to the business in general. Such price cutting does more to hold down prices than all the big buyers put together could do.

Central Grading Stations for Comb Honey

By L. A. Knemeyer.

EVERY beekeeper has his or her grading station right at home. That is, all the comb honey is put up ready for the market on the premises.

The grading is, or is intended to be, according to the well established and recognized rules of the Colorado Honey Producers' Association. The result should be a uniform market product, a market value easy to sell, to ship, and at all times satisfying to the customer.

This can be attained only when all the honey is put up in a uniform way, when all fancy honey is really fancy, when No. 1 is really No. 1 and not either fancy or No. 2, etc., and when all the honey is put up in the same manner. Only then the producers will find a ready market.

Every up to date beekeeper wants to overcome the so-called "misgrading" or rather "different" grading of his honey, and this can be done only by having all the honey of a certain locality put up by the very same crew of workers, and under the same working conditions as far as grading rules, grading light facilities and grading scales are concerned. This can be done only at a "Central Grading Station"; that is, all the honey of a certain locality should be brought to a central place and there put up by the same force of workers. This method has not been tried yet.

A second way would be to have a grading party going from producer to producer grading the honey which is ready for grading. This latter way has been tried and found a failure, according to a statement by Mr. Frank Rauchfuss, of Denver. He stated that on account of the different light facilities the very same person was grading in an altogether different way at different grading places.

For the establishment of a "Central Grading Station," we have the following arguments:

1. The scraping and cleaning can be done more satisfactorily.

2. The grading can be absolutely uniform.

3. The buying, nailing and storing of the shipping cases is simplified.

4. The loading and shipping of the honey can be done easier.

5. The protection against theft and fire is easier obtained and secured.

6. The keeping of a certain temperature for the stored honey will be more easily achieved.

Against the establishment of a "Central Grading Station" are the following facts, some of which we can overcome and some which we simply have to suffer:

1. The almost unpreventable nuisance of having more or less molesting bees around the place.

2. The finding and renting of a suitable place.

3. The renting expense.

4. The transportation of the supers to and from this place.

5. The keeping apart of each producer's honey, supers, supplies and broken-down honey.

6. The employment of a "grading superintendent," a man well acquainted with the whole routine of the "putting up" or "getting ready" for the market of the comb honey.

In case we decide on a central grading station we have to consider the rent of the building, the employment of a grading boss, the protecting, insuring and keeping warm of the honey.

A committee would arrange for a meeting of all honey producers belonging to a particular grading station. Said meeting would fix all business matters needed for establishing the station: locating and renting a suitable place, providing grading tables, scales, deciding on the plan and manner of running the grading business, etc.

Second. The grading committee would adopt certain grading rules in accordance with the requirements of the honey market.

Third. A set of grading samples for the grading station should be secured.

Fourth. Hire all the needed working force for doing the work of grading and teach the persons the right way of grading and give them all the instructions necessary for grading.

THE SIGN ON GAKLER'S WAGON IS A FAMILIAR SIGHT IN MEMPHIS, TENN.

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Frank C. Pellett, Staff Correspondent.

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THE EDITOR'S VIEWPOINT

Prices of Bees

Some of the shippers of bees in combless packages talk of raising prices another year. We believe that those who do will find that they have made a mistake. At present bees are selling at about a dollar per pound with transportation and cost of queen extra. This we believe to be about all the traffic will bear. In most of the northern states bees sell at from $3 to $5 per colony, which includes bees, queen, hive and drawn combs. This year there has been a very great demand for bees. This is largely the result of last year's wonderful crop. The crop this year will fall far short of that of last year and many localities report a very poor prospect. The southern shippers should bear in mind that this year's demand is not a safe guide on which to base plans for future business. We firmly believe that the package business has come to stay and that conducted on a business basis it will prove dependable for many years to come. However, boom prices for honey and big crops are seldom to be expected, and neither the honey producer nor the package man should be deceived by these extraordinary conditions. Beekeeping is a safe enterprise for a long series of years, but a period of depression is quite likely to follow a period of undue expansion, the same as in other lines of business.

The Control of Fertilization

Under the heading "We Have Not Done It," Gleanings bravely acknowledges that, after great expense in preparing a large hot house for fertilization of queens, the attempt was a failure. We take off our hat to the man who knows how to tell of his ill-success as well as of his achievements.

Two methods have been tried for fertilization of queenbees under the control of the apiarist, confinement in a large room or cage with plenty of drones, and forced copulation by what might be called a surgical operation.

Both of these methods have been claimed successful by leading apiarists at different times. Mrs. Ellen S. Tupper, who for a time was coeditor of the American Bee Journal, in 1874, with the Rev. W. F. Clarke, claimed success by the cage method, and told the writer personally that she had had hundreds of queens fertilized in this way. Whether she was deceiving herself or trying to deceive others is a question.

N. W. McLain, who was appointed by the General Government in the eighties for experiments in beekeeping, claimed success in forced copulation, and published an article upon this subject in the American Bee Journal of May 5, 1886. Mr. McLain was apparently a very active worker. He had his headquarters at Aurora, Illinois.

Although it is quite probable that an occasional success was achieved, perhaps with each of these two methods, we believe it is well to warn the prospective experimenter against too much confidence. We do not mean to say that success is impossible. No one knows what the future has in store, and impossible things have been achieved; witness wireless telegraphy and human air travel. But the simple thing of bee matings seems to baffle the most sanguine experimenter.

Controlled fertilization of queens would be worth while. Until it is achieved no certainty may be placed upon thorough breeding of a race. The nearest that may be secured is by isolating the colonies used for breeding or by allowing the queens and drones to fly only late in the day, when other drones have returned. This has been secured fairly well by placing the colonies in question in the cellar until late in the day.

Are We Improving

The bee journals of twenty-five years ago are very interesting reading. The most animated discussions run through successive issues. Many things that were holding the attention of the beekeepers then have been discarded, while other questions have been so thoroughly settled that there is no longer room for question. For months the question of whether the beekeeper could honorably and profitably feed sugar to be stored and sold as honey was debated with great heat. The high price of sugar has long since made such a question impossible, even had not the pure food laws settled it otherwise.

Self hivers received a surprising amount of attention for a year or two, and some beekeepers even went so far as to declare that they were the greatest invention of the age, not excepting the movable frame. Who has even heard of a self hiver during the past ten years? Dozens of similar utilities were put forward with great expectations only to be proved impractical.

Comb foundation is now regarded as absolutely essential to successful beekeeping, yet there were heated arguments about its value for a long period of time before it finally demonstrated its usefulness.

After reading the spirited and sometimes bitter controversies of other days, one cannot but contrast them with the journals of the present and wonder whether we are making as much progress as we think. Such debates indicate the liveliest interest on the part of the readers. Possibly the difference is only that we lack the new ground to break which goes with pioneering in any country or any business.

Is Swarming Wasteful

The "Weekly News Letter" of the U. S. Department of Agriculture for June 6 contains an article concerning the "wastefulness of swarming." We had never thought of it in that light. But swarming is really very wasteful when it takes place at undesirable

times or when the colonies ought to be busy storing honey. It is especially wasteful when 1, 2, 3 or more natural swarms issue from one colony. We have known of apiaries entirely depopulated when a hard winter followed a season of excessive swarming. The worst feature of it is that many inexperienced bee owners are pleased with what they think is extraordinary prosperity. The careful and practical beekeeper never allows secondary swarms, and returns them to the parent colony, if they happen to issue. Hiving them in any sort of box and returning them to the parent colony the next day is almost a positive cure for further swarming.

Government Help to Beekeepers

More than ever before, the United States Department of Agriculture is making efforts to help beekeepers by furnishing information free of charge and by urging beekeepers in the whole country to follow modern methods. The result will be better beekeeping, less diseases and more practical methods of selling the crop. Honey producers must stop the practice of selling their honey at whatever price they are offered. A fair, reasonable price should be secured, which ought to be based upon the amount produced.

Can What You Can

The very excellent piece published in our July number under the above title has been praised by many. It was written by Mrs. H. K. Beard, of the Pennsylvania Association, and read before that association in the fall of 1909. It was then published in Gleanings and republished in their June number of the current year. It is worthy of the notice it has secured.

Bees Killing Queen, After Safe Introduction

Why do bees sometimes kill their queen after she has been safely introduced and has been laying a number of days?

The above question is sent to us by a novice. But even a man of long experience cannot answer this question with any great certainty. Dr. Miller's well-known "I don't know" would probably fit the question best. We can only make suggestions.

The behavior of bees towards each other as well as towards queen and drones depends very much upon circumstances. In good honey weather, when everybody is happy, things go on smoothly. You may take a nearly full super with all the bees in it from a strong colony and exchange it for the nearly empty super of a colony under average, thus equalizing their storage room, and you will have no disturbance if the crop is on. But if the dearth has come, you may look for a fight. If there is plenty of honey in the fields, the drones may make their home in any colony or go from one to another without opposition. Similarly, if you wish to introduce queens safely, you will succeed much better in good honey weather.

W. D. WRIGHT, of New York.
One of the oldest subscribers to the American Bee Journal. See article in last issue.

If a queen is introduced in times of scarcity, after the old mother has been removed, she may be accepted, under self-reservations, by some of the bees, although the great majority of the workers may have accepted her in entirely good faith and are considering her as their real mother. If she should prove insufficiently prolific, or if disturbances beyond control should induce more or less robbing, those bees who have reluctantly accepted her may become angered at her and start a revolt or balling of this queen. Or they may start queen-cells, with the expectation of superseding her as soon as the young queen is fertile. This is noticed often with queens that have suffered from protracted transportation. They lose their fertility to a certain extent from the confinement, acquire an unpleasant odor and become sluggish. Usually a few days of rest bring them back to full vigor and breeding capacity, but in some instances they never do regain full activity. We believe very young queens are more likely to regain their strength after travel than old queens, even if the latter are only yearlings.

This is an explanation of the superseding queens which have been thought safely accepted. The dangerous thing is that it takes only two or three angry bees to cause a queen to be balled. Bees are not much superior to human beings when it comes to insurrection, and much of the troubles of the world would not happen if living beings had more patience.

The less fatigued a queen is, the more certain she is of safe acceptance. We have never had any trouble in inserting a queen into a drone-laying colony, because we have always used for that purpose queens that we wished to discard to make room for better ones. Those queens were always taken from colonies when in good condition, and were therefore in the best of trim for safe introduction. No one can boast of an infallible method of introduction who has not tried it on queens fatigued by two weeks or more of travel.

Congregation of Queens and Drones

Last summer I saw a sight which seems to bear out Doolittle's idea that queens and drones congregate in places to mate. I had out probably 800 nuclei. About 2 o'clock in the afternoon I was out in the queen yard and heard the roar of drones and later saw something flying very fast and walked out to where I saw it, as it was in a clear place. There were I don't know how many queens, and drones without number. You have seen birds chasing crows; that is the way they were, from one to fifty drones after a queen at once. Then in a second one would have her and the drones would disperse so quickly it was hard to tell where they went. They flew so fast that you could hardly follow them. At the rate they were flying none but the strongest drones could ever be lucky enough to capture them. After about ten minutes the whole thing had moved out of sight.

D. D. STOVER.

Bumblebee Flowers

By John H. Lovell

Photos by the Author

MOST people suppose that all flowers yield nectar and are valuable as sources of honey. A supply of nectar sufficient to meet the wants of a small apiary is commonly thought to be afforded by an acre of buckwheat or a large flower garden. Beekeepers, indeed, are generally aware that many flowers furnish only pollen; but when it is remembered that not one beekeeper in thirty takes a bee journal it is evident that the majority of them have only a meager acquaintance with the American honey flora. Even by the more progressive beekeepers nectariferous flowers adapted to bumblebees, moths and birds are often listed as good honey plants. Bumblebee flowers are so common and so widely distributed that no student of the honey flora can afford to neglect them, yet, if I mistake not, this is the first paper on bumblebee flowers ever published in an American bee magazine.

Of all bumblebee flowers the most important and by far the best known is red clover (Trifolium pratense). When insects are excluded red clover is almost wholly self-sterile, as can be shown experimentally, for when the plants are covered with fine netting less than one-half per cent of seed is obtained. The flowers are pollinated chiefly by long-tongued bumblebees, which under normal conditions are alone able to obtain the nectar. The floral tubes are 9 mm. long, which, of course, excludes the honeybee which has a tongue only 6¼ mm in length. Our domestic bees quickly learn this fact from experience and seldom visit the clover heads except when the corollas have been shortened by dry weather or other causes. When this happens, as has been observed by Doolittle and Hutchinson and others, hundreds of

Fig. 1. Red Clover (Trifolium pratense). Photograph by John H. Lovell.

Fig. 3. Wild Columbine (Aquilegia Canadensis L.) A bumblebee flower. Photograph by John H. Lovell.

pounds of red clover honey are stored. Even in the same clover head I have found by actual measurement that the floral tubes vary in length, and it would be little short of a miracle if they did not, for flowers of all kinds vary in size and consequently in length of their petals. Honeybees sometimes visit the flowers of red clover to procure pollen, when they spring the keel and effect pollination. (Fig. 1).

In lands where there are no bumblebees red clover seed cannot be profitably raised for market until after these insects have been introduced. In New Zealand, fields which were almost barren in their absence produced great quantities of seed after their advent. At Canterbury 26 acres of red clover were the resort of thousands of bumblebees and yielded 400 to 500 pounds of seed per acre. In one province alone, in 1912, 610 acres were sown with red clover, which it is estimated yielded an average of 158 pounds to the acre. Thus bumblebees benefit the Islands of New Zealand annually to the extent of many thousands of dollars.

A half dozen bumblebee flowers are widely cultivated in flower gardens. The stately larkspur, with its wand-like raceme of deep blue flowers, is a native of Europe, where it is pollinated by the female of the garden bumblebee, no other bee on the wing at the time it blooms having a tongue long enough to reach all the nectar, although a part of it is accessible to a few other bees. I have seen honeybees searching the flowers and pushing their tongues down into the long spurs as far as possible, but they were never able to gain any of the sweet spoil.

Then there are the aconites or monkshoods. If you will take a plaster cast of the inside of a flower you will find that it corresponds almost exactly to the shape of a medium-sized bumblebee. This genus of plants is so dependent on bumblebees for pollination that it is absent from those parts of the world where there are no bumblebees. For instance, there are no native bumblebees in Australia, Arabia, Southern Africa, or New Zealand, and in these countries there are no indigenous species of Aconitum. (Fig. 2).

The columbines manage to thrive and bloom under the most difficult conditions of soil and climate. The long spurs of the variously colored pendulous flowers are rich in nectar and are frequently visited by bumblebees. The columbines are often re-

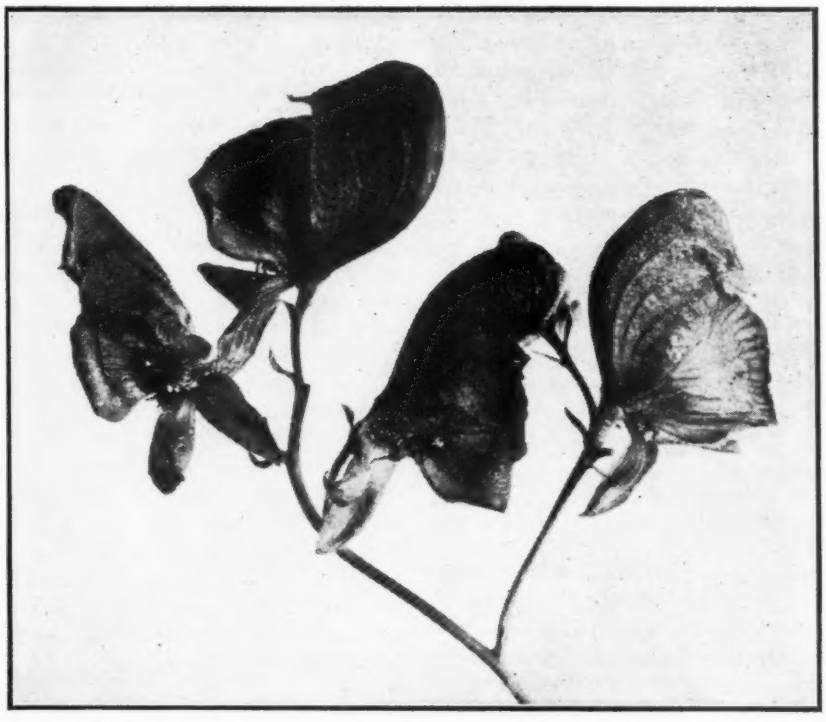


Fig. 2. Monkshood (Aconitum Napellus). Photograph by John H. Lovell.

garded as honey plants, and are so listed in the Honey Plants of Nebraska, but I have never seen a honeybee obtain the nectar in the normal way. But in order to get the nectar more quickly, bumblebees bite holes in the spurs, and then many honeybees resort to the flowers and suck the nectar through these punctures. Our wild columbine has scarlet flowers which are yellow inside, or rarely all over. It is visited by humming-birds as well as by bumblebees. (Fig. 3).

The snapdragon, with its many colored varieties, is another bumblebee flower widely cultivated in gardens. So firmly are the lips closed together that the smaller bees cannot force them apart, and thus the nectar is protected for the rightful guests. But as the flowers grow older the lips often part slightly, and then the smaller bees can gain an entrance. The great size of the corolla permits the largest bumblebee to creep wholly within it.

Another common bumblebee flower is the garden nasturtium. The lower part of each petal is marked with red, which serves as a guide to the honey; while the claws of the lower petals are fringed with hairs, which prevent water running into the spur. Honeybees cannot reach the nectar, although they sometimes attempt to do so. Occasionally they gather pollen from the anthers, which are fully exposed and dehisce or open one at a time, rising successively before the mouth of the flower. Only bumblebees with the longest tongues can reach all of the nectar; and here it may be added that the tongues of the various species of bumblebees vary from 5-16 to 13-16 of an inch in length. The spur is so tough that bees cannot perforate it, although they apparently sometimes make the attempt.

Frequent references may be found in bee literature to the spotted "touch-me-not," or Impatiens biflora, which covers acres of damp land and blooms profusely. The flower is shaped, as shown in the figure, like a horn-of-plenty with the

Fig. 4. Jewelweed or Touch-me-not (Impatiens biflora). Photograph by John H. Lovell.

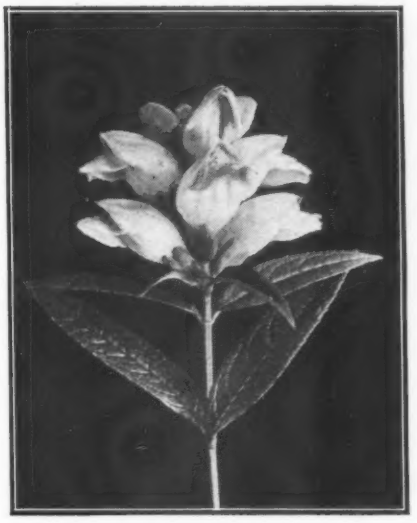


Fig. 5. Turtlehead (Chelone glabra L.) A bumblebee flower. Photograph by John H. Lovell.

spur bent inward beneath it. It is a bumblebee flower and is very frequently visited in the locality of the writer by the wandering bumblebee (Bombus vagans) and the ground bumblebee (Bombus terricola). The blossom is suspended horizontally with the stigma and anthers lying on its upper side so that when a bee enters the corolla sac its back is dusted with white pollen, as has often been observed and mentioned by beekeepers. But contrary to the general impression, honeybees obtain little if any nectar from the Impatiens, except when the spurs are punctured by bumblebees. (Fig. 4).

It is a matter of some difficulty and delay for bumble bees to enter the flowers, and very likely short-tongued workers are not able to reach all the nectar, so after a little time they bite holes in the spurs, out of which they steal the sweet contents. On August 10th I examined a large number of flowers, but none of the nectaries were punctured, and they were visited normally by Bombus vagans at the rate of from seven to twelve visits per minute. But during the latter part of August I found hundreds of spurs perforated and both bumblebees and honeybees gathering the nectar from these punctures. (This habit led Mueller to call the bumblebee an "anti-teleologist.") A honeybee was watched during 25 successive visits, and not once did it even make a pretense of entering the flower, but in every instance it swung itself astride of the spur, pushed its tongue through the puncture, and became literally a flower robber. Ten such visits may be made in a minute. The Impatiens is certainly rightly named.

A typical wild bumblebee flower is the turtlehead (Chelone glabra), which grows along the banks of streams and on wet land. The large white flowers rudely mimic in form the head of a turtle. Although I have had them under observation for many hours and on many different occasions, I have never seen them entered by any insects except bumblebees. Wasps and flies sometimes examine the lips, which are tinged with yellow, apparently looking for nectar, but they never pass between them into the corolla chamber. I once placed several flower clusters of the turtlehead in front of a beehive, but they received not a single visit from the many honeybees coming and going; but in a little while, notwithstanding their unusual position, every blossom was examined by bumblebees. The honeybees seemed instinctively to know that these flowers were not designed for their use. (Fig. 5).

Last summer I saw a blue meadow, or one largely covered with the purple-blue flowers of the blue flag (Iris versicolor). While bumblebees make the best pollinators of this species, it is not strictly a bumblebee flower, since it is often visited and pollinated by honeybees. In the absence of insects it is usually self-sterile. The nectar is excessively wasted by the blue flag beetle, which passes its entire life on this plant, the larvæ feeding on the seeds and the adult beetles on the nectar; this weevil sinks many holes in the nectariferous tissue, from which the nectar flows freely, attracting swarms of flies and beetles.

The closed gentian and the fringed gentian, both of which are bumblebee flowers, have funnel-formed corollas. The gentians bloom in late autumn, and are especially abundant in the Alps, where they display great sheets of blue color. The closed gentian never opens, and on a cold morning the temperature within the corolla chamber may be several degrees above that of the outside atmosphere. The fringe of hairs on the edge of the corolla of the fringed gentian prevents the ingress of small insects. (Fig. 6).

Other familiar bumblebee flowers are the Rhododendrons and Azaleas and the beautiful Rhodora canadensis, which is pollinated in spring by

Fig. 6. Fringed Gentian (Gentiana crinita). Photograph by John H. Lovell.

queen bumblebees, the only caste of bumblebees then on the wing, for the males and workers do not appear until later; the fly honeysuckle (Lonicera ciliata), also pollinated in May by female bumblebees, which in their haste to get the nectar often cut the buds into shreds; the Tartarian honeysuckle (Lonicera Tatarica) of the garden; the bog fly honeysuckle (Lonicera coerulea); the bush honeysuckle (Diervilla trifida), the yellow flowers of which turn red in fading; the horse chestnut; the foxglove, and the Gladiolus.

The garden pea is almost invariably and the garden bean is usually self-fertilized, but both, as well as the scarlet runner and sweet pea, are in fact bumblebee flowers. Honeybees often visit the flowers of the scarlet runner, from which they are able to suck a little nectar, and occasionally the nectaries are perforated by bumblebees and then the honeybees rob the blossoms in wholesale fashion. Besides the red clover, the crimson and Alpine and several other clovers are bumblebee flowers, indeed a good many of the pulse family, although visited by honeybees and other long-tongued bees, as well as bumblebees, seem rather better adapted to the latter, since they are better able to depress the keel.

The lungwort (Pulmonaria officinalis), Belladonna (Atropa Belladona), the bearberry (Arctostaphylos Uva-ursi), the wood betony (Pedicularis silvatica), gill-over-the-ground (Glechoma hederacea), and largely butter-and-eggs (Linaria vulgaris) are bumblebee flowers. The scarlet sage (Salvia pratensis), with its walking beam mechanism for placing the pollen on a bee's back; dragonhead (Dracocephalum), Molucca balm (Moluccella laevis), bugle (Ajuga reptans), and several orchids, as the showy orchis (Orchis spectabilis), the pink flowers of Pogonia (ophioglossoides), common in bogs, and Calypso borealis are all pollinated by bumblebees. The pretty flowers of the purple Gerardia (Gerardia purpurea) are abundant in autumn, but they contain little nectar and attract only a few bumblebees. Finally, there may be added to the list Cerinthe alpina, Scopolia atropoides and black henbane (Hyoscyamus niger).

This is far from an exhaustive list of bumblebee flowers ,but it includes the more common species, and shows how widely distributed and abundant they are. In many instances honeybees are able to gather pollen and not infrequently a little of the nectar; but, so far as I am aware, not one of these bumblebee flowers is of much value as a honey plant. Bumblebees have played an important part in the development of our flora and the bumblebee flowers should be known to every beekeeper.

The Use of Barrels for Honey

By the Editor

REGARDING what barrels to use for storing honey temporarily, before pouring it out into retail receptacles of different sizes, our readers are referred to the editorial in the July issue. We will now explain how we take honey out of a barrel, even after it is granulated, without damaging the barrel.

We must, however add a few words concerning the use of barrels. While reading the July editorial on this subject, a friend turned to the editor and said: "Of course, you wash out the barrel with hot water first?" Not by any means. We have said, and we repeat now, that "a barrel will not do which has been rinsed out." The barrel must be as dry as possible and the glue coating inside, which is so slight as not to be easily detected when the inside is inspected, must not be disturbed. The barrel must be dry, else the honey would absorb the moisture which it contains within the staves and the barrel would leak.

Syrup barrels which have iron hoops may prove as good as alcohol barrels, but they must be free from odor. Alcohol evaporates very readily and a barrel which has contained it is perfectly clean unless it has been used for other purposes meanwhile.

When pouring fresh harvested honey into barrels we use a large funnel and sieve, which is almost a necessity. A whole pailful of honey is dumped into this without having to wait for it to run through the funnel.

Let me repeat that the great advantage of barrels is that the honey may be drawn from them into any sort of retail receptacle as trade requires. Drawing from 5-gallon tins is much more troublesome. If the barrel has been set properly with the bung up, for a few days, while the honey is liquid, the few particles of wax which may have found their way into the honey will be drawn off with the last gallon or two. This is put into an open vessel and the skum skimmed off as soon as it has risen to the surface.

When it is expected to allow the honey to granulate in the barrel, the latter should be set on its head, so that the moats of wax will be at the top, when the head is removed. If a half gallon of space be left when filling the barrel, the head will not touch the honey and will be more easily removed.

To remove the head and not injure the barrel we first mark the head and the chime in such a way that the exact position in which the head is placed may be found again. Two marks, on edge of head and chime, with a pencil, a crayon or a chisel, will enable one to find the exact spot in resetting the head. If this is not done, the head may be put back in another position and possible slight irregularities, which fit into each other, will be placed so as to cause ill-fitting joints and possible leakage in future. We must have our barrel as good as before, so that it may be used indefinitely. For convenience, the hoops may also be marked so as to be returned in the same position.

We now use a strong gimlet screwed into the center of the head for a hand hold. With a hoop-driver and a mallet, the hoops are driven up and removed from the head. If the honey be slightly liquid, it is well to retain one or two to be put back as soon as the head has been lifted out.

The staves may have to be driven apart a little. Usually they fly back to assume a straight, nearly upright position as soon as released from the hoops. The head is lifted away without effort by means of the gimlet. If no gimlet is at hand when the operation is performed, a

Before removing the head of a barrel mark the head and chime carefully

Chasing the Hoops on a Honey Barrel

large nail or screw may be used in its place.

When the honey is granulated very hard we find nothing more convenient to dig it out than a clean, bright spade.

We have often removed the head of a barrel of honey, taken the honey out, melted it, put the head back in its place and poured the honey back into the same barrel, in the liquid form. Here a warning is necessary. Do not put back the honey into the barrel while hot. We have known hot honey to absorb moisture to such an extent as to shrink the staves and leak out.

If the above instructions are carefully followed, the same barrel may be used over and over a number of times. It should be thoroughly emptied if the intention is to keep it ready for the following year's crop. A little honey remaining on the inside may absorb moisture and cause fermentation of the next lot.

Legal Advice on Beekeeping

By Our Staff Correspondent

"The city council here has passed an ordinance making it unlawful to keep bees within 500 feet of any dwelling or public place They must also be elevated 30 feet in the air and confined on their owner's property. There is a provision for fining the beekeeper not to exceed $100 per day for keeping bees in violation of this ordiance." INDIANA.

It is hard to find words to do justice to a case of this kind. The ordinance is so absolutely foolish that there is little question but that the courts would declare it void upon proper presentation of the case. Had the council been content to stop at requiring a distance of 500 feet between the apiary and a dwelling there would have been some ground for them to stand on. Even this is an excessive distance in town. It would be hard to find a location a fifth of a mile from a dwelling in any town of my acquaintance.

The beekeepers of the country should certainly form some sort of organization for fighting such farcical legislation as this on the part of town councils. The Iowa Beekeepers' Association has prevented the passage of such ordinances in some cases by taking the matter up when it was under consideration and serving notice that there would be a contest if an ordinance was passed which prohibited the keeping of bees within the town limits.

In a case of this kind the beekeeper is compelled to fight for his rights. He can wait to be arrested and then defend himself on the ground that the ordinance is void, or he can employ an attorney and attack the ordinance at once. In either case it is expensive, and beekeepers generally should assist in paying the cost of such litigation.

"Can I keep bees in town on my own property? I am a beginner. My bees have at two different times stung one of my neighbors and he promises to make me trouble. Can the town council declare them a nuisance and force me to get them out of town?" ILLINOIS.

Here we have again the old question of the right to keep bees in town. We have already answered similar questions in these columns. The town council cannot legally pass an ordinance prohibiting the keeping of bees within the town limits on the ground that they are a nuisance. On the other hand, if your bees are so situated that they continue to annoy your neighbors they may be a nuisance in fact, and if so there is ample authority of law to compel you to remove them. It all depends upon circumstances. You do not say anything about the circumstances under which your neighbor was stung. If he was at a distance from your premises how does he know that it was your bees which stung him? Bees fly for a long distance and it is difficult to prove the location from which a particular bee might come. If your neighbor lives close to your apiary you should by all means seek to get your hives located in such a way that they will not annoy him.

In general a man has a right to keep bees on his own property in town the same as anywhere else, but the residents of towns are bound to respect certain rights of their neighbors which do not require consideration in the country because of the greater distances.

"If a swarm of bees alights on another man's property, have I the right to get them after asking my neighbor and he refuses permission." IOWA.

If a domestic animal strays on the premises of another the owner has no right to follow and reclaim it, according to a strict interpretation of the law, for in so doing he becomes a trespasser. However, he still retains his right of ownership. The same rule will apply to bees. There are several court decisions which maintain that the owner of bees which have thus gone beyond his property limits can recover damages for the amount of their value from a third person who hives them and takes them away.

In case bees, as any other property, are wrongfully detained from the owner, he may bring an action of replevin and recover his bees or their value.

It would be an unusual case which would justify a beekeeper to start legal action for recovery of a swarm of bees. Although his rights in them are the same as though the value was much greater, the amount at stake is too small to make it worth his while to start a quarrel. A better plan is to send a jar of honey to the neighbor before the bees begin to swarm, and thus establish a friendly feeling toward the bees.

A Personal Experience in Marketing Honey Direct to the Consumer

By Ralph R. Bent.

IT is a common thing today to hear of students in various colleges working their way through school. The writer, being a beekeeper, was obliged to depend on these insects for his livelihood while in college.

The sale of honey direct to the consumer is by no means easy, unless properly carried on. Many beekeepers attempting marketing their products in this manner make several serious mistakes. One of these mistakes is, no matter whether the customers are large or small users, they should be called upon regularly. I have in mind one woman who once purchased a ten-cent bottle of honey when I called upon her at her home. I called upon her nearly every week for nearly two years, during which time she never purchased from me. Today she is one of the largest honey users that I know of, using it to sweeten her tea and coffee and all of her cooking. This experience goes to show that the public requires educating. I always have aimed to distribute any literature on the subject possible, such as cook books, circulars, etc. At first, when getting around, our conveyance was a homemade affair composed of baby buggy wheels and a soap box, covered with attractive signs. This made quite a push cart. On visiting each house the lady was shown a one-frame observation hive or nucleus and the queen bee. After explaining to her some of the wonderful mysteries of the industry, she was asked to taste our pure honey. Such a call as this, properly conducted, is almost certain to bring sales.

After such experience, I have chosen packing honey in pails for a "Direct to the Consumer" package, the sizes being 2½ pounds, 5 pounds and 10 pounds. The prices which we receive are 40c, 75c and $1.35. We pack nothing but an amber honey,

TICKET USED BY RALPH R. BENT IN STIMULATING SALES OF HIS BEE LINE HONEY.

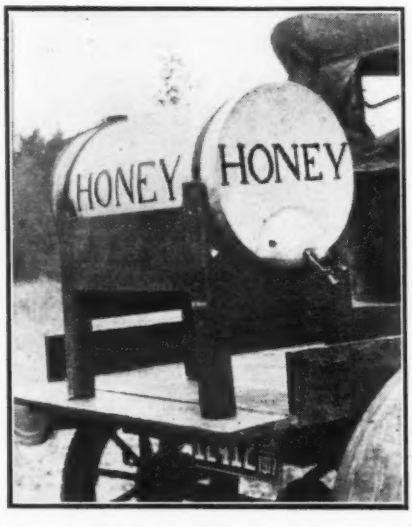
and blend to obtain a mild, suitable flavor.

By constant perseverance this small direct to the customer peddling business soon grew to use all the honey the writer could produce. The next thing resulted in having to purchase the entire crops of several other beekeepers in order to accommodate the demand. As time went on, a Ford car took the place of the push cart. A large part of the business developed into a mail order system. People who had used the honey told their friends, our circulars and cook books more than paid, although it may have seemed an unnecessary expense.

During 1915 the writer, having finished college, took charge of a honey exhibit at the Panama-Pacific Exposition in San Francisco. Here a new, important discovery in the way of the direct to the consumer marketing was found. It may be a surprise to the reader, also, that three-fourths of the pails sold during the 1915 Exposition were ordered by men. I therefore conceived the idea that if I opened up a honey store on Market street, San Francisco, in the heart of the business section, it might prove successful. This we did in 1916, and have found our method very profitable. We have placed an observation hive in the window and on Saturday afternoons we sometimes give a live bee demonstration, where thousands of people passing by are greatly amazed at beholding a boy in a bathing suit pour handfuls of live bees over his head, and even putting them in his mouth. All this arouses interest and is the best and cheapest advertising. In spite of the high rents, our business promises to be very successful.

Strange as it may seem, our cheapest package of honey is 40c, with the exception of comb honey. I might mention that we also handle at our store cakes made of honey.

Another means of very successful advertising is our lectures and live bee demonstrations given before various church societies, lodges, clubs, etc. For such demonstrations we issue a ticket which gives admittance to the lecture.



Honey Tank Carried in Car for Retail Sales.

These tickets are given free to the church societies. They are allowed to sell them for 5, 10 and 15c, or even 25c, and keep the proceeds themselves. At such a demonstration a hive is opened under a bee tent made of mosquito bar and the bees handled in the freest manner; the people are shown the queen, drones and workers and other interesting things found in every colony of bees. The demonstration is accompanied by a lecture, after which honey refreshments are served. The refreshments are composed of honey direct from our pails and spread on small crackers. A liberal distribution of facts about honey and other circular literature is handed out. Through such a demonstration it is not uncommon to bring about the sale of several hives of bees, as well as obtaining many permanent customers as consumers of our product.

As I said before, it is my practice to continually call on and keep at our customers. So we have devised a scheme by which we obtain the names of those who buy over our counter. We do it in this way: In our window we advertise a free 5-pound bucket of honey, given away each week, and each purchaser is requested to write his name and address on a ticket, which is then divided, the half which they keep bearing our name and the stub, to be dropped in a box, bearing theirs. One person out of several hundred each week is fortunate enough to win a bucket. He is notified by mail and asked to call at the store for his prize. The remaining stubs contain names and addresses of actual users of honey and honey cakes. To these we send literature and advertising matter, and invariably we receive repeat orders. There are many other phases of our direct to the consumer business, but space prevents us mentioning more at the present time.

A Honey Route

There are many places where a fine trade in honey can be readily established if the beekeeper makes regular trips over the route. At Leslie, Georgia, Mr. T. W. Livingstone and his son-in-law, Mr. J. R. Hudson, have found it possible to dispose of a large amount of honey in this manner. The picture shows their large closed tank which is loaded on the auto and carried from place to place over the route. The use of this tank relieves them of the necessity of buying containers of various sizes and also saves the customer the cost of the container. The honey is drawn directly into any kind of pail or jar which the customer happens to have at hand. The tank is tight, so there is no danger of flies or dirt getting into the honey, and if any is left on the return from a trip no harm is done, as it need not be removed until the next trip. While some customers will only buy two or three pounds, many buy a liberal supply, and once the customers are accustomed to look for the honey man little time is required to cover a 25-mile route. Such a tank would be a useful addition to the equipment of an apiary.

Advertising Your Business

By J. D. Gustin.

THE subject of advertising is one that is often neglected in places where it should receive the most attention. At some time in the experience of every man who pursues a single line of business to any appreciable extent the question of advertising will come in for consideration.

In the larger lines of commercial enterprise the advertising problem is delegated to the solution of experts who prepare the matter and determine the methods of its distribution. But in the more limited lines every man is his own ad writer and circulator. And oftentimes, if not always, the subject of advertising is of more importance to the small business than to the large one, for the reason that any waste from injudicious expenditures represents a higher percentage of loss. On the other hand, advertising which brings a quick and profitable return furnishes the means for business expansion and makes possible a quicker success.

The question whether advertising pays is no longer a live one. The live question is what advertising will pay best and bring in the most prompt results? There are many sides to the more or less numerous views of the correct answer, and opinions differ widely. The history of advertising successes reveals many curious features, and if the history of advertising failures had been preserved, doubtless it would have its many lessons.

Nevertheless, there are some fundamental principles upon which practically all agree. The first of these is that the advertisement which "catches the eye" of the prospective customer is the most valuable. Advertisements are now almost "news of the day," so universally do people pay attention to them. Newspaper advertisements, billboards, blotters, stationery, stuffers, etc., have become almost a part of the daily mental menu of the average man whose eyes are open at all times to the things around him. Yet it is a conceded fact that a large portion of it is of a low standard of value compared to the things that really "catch."

By "catching the eye" the advertising man does not mean merely that the advertisement shall pass within the range of vision of the passer by, but that it shall be such as attracts his interest. It may be a picture, it may be a "slogan," it may be a dash of color standing out conspicuously, it may be any one of a thousand or more objects in which it forms a part of the group, but whatever it may be, if it has the virtue of arousing the interest of those

who "read as they run" it possesses advertising value of the highest order. The commonplace thing is lost to the reader in the interest which the uncommon arouses.

To the man who aspires to a business beyond the confines of his own personal acquaintance it may be pointed out that there is no way in which he can realize his ambition as quickly and as certainly as by careful and judicious advertising. It has been written that "If a man preach a better sermon, write a better book, or make a better mousetrap than his neighbor, the world will make a beaten path to his door, though he build his house in the wilderness." But the world must first be convinced of the superiority of the product, and herein lies a large part of the value of giving that product a name or mark by which it may be distinguished from other products of like nature.

The miller does not brand his product "Pure Flour," neither does the butcher call his pork and mutton "Pure Meat." But you will find the honey producers often placing their honey on the market with no other distinguishing label than "Pure Honey." Far better it would be, especially for the producers and marketers of high grades, to place some distinctive name on their packages. Even though in a given market there be no present competition, any day may witness invaders of the field, and an established trade by a certain name is less easily disturbed than any other.

It is well for a producer to bear in mind that his custom will call for the best he can produce. His long trade and his profitable trade will be largely in the high grades of his production, no matter what the article may be. On this best feature is his foundation for a business superstructure that will prove his greatest asset.

Everything he uses, everything he does in connection with his business should reflect this superiority. The commonplace does not attract, does not distinguish from other commonplace things. Especially does this apply to such things as will be intimately associated by the public with his business, and particularly to all printed matter. This point has been aptly stated by a very large advertiser in this language:

"Did you ever seriously consider what your printed matter really is? It is nothing less than your portrait—your representation—your business 'front.'

"In these days, face to face transactions are rare. The letter or bill, the document or inclosure, the folder or booklet—these have replaced the personal element.

"No business can afford to show itself in the unpardonable garb of indifferent stationery or sales literature. Dignified gentility is always 'correct style.'"

In the printing trade, as in the trade of honey production, there are many novices. Printing is not the simple process that it is generally believed to be. Good printing is the result of a combination of three very essential elements: Good material, good stock and good taste.

Many honey producers, and people in other lines for that matter, regard their printing with much indifference as to its quality, and consider it a necessary burden incident to their business rather than a working asset. Consequently the one thing which they give attention to in the matter of printing is price. Cheapness is everything, quality nothing. To these, of course, the expenditures for printing are nothing more nor less than a dead expense.

As a business proposition a man is no more justified in paying out money for printing which will not earn money for him than he is in paying out money for any other sort of inferior equipment. Like the ancient straw "skep" or the "bee gum" of pioneer days, inferior printing will in a way answer a purpose. But who would think nowadays of beginning a business of honey producing with such primitive methods?

Naturally beekeepers are not always expert judges of the quality of their printing; perhaps in very few instances can they discern the difference between the good and the inferior, and their demands for printed matter have not, perhaps, been sufficient in volume in any one locality to justify the proper equipment of local printers to handle their needs. The obvious remedy for this is to get the work elsewhere.

A BETTER COMBINATION
When one neighbor raises flowers
And another chickens
Oft they fight like irate powers,
Daily raise the dickens
Neighbors ought to strive to please
Folks should not be scrappy
Better make it flowers and bees
And be truly happy
Louisville Journal
WM. J. McDOUGALL
LEWIS RUN, PA

Neat and catchy labels and other advertisements bring first sales. It is up to you to furnish the product so as to get repeat orders.

A second fundamental principle in the matter of advertising in general is that of frequent repetition. Quoting from the same authority referred to above:

"It has been said—it has been forgotten! Repeat, please, for memory faileth. Every man knows a thing or two if he could only recall them.

"To build a business reputation you must employ repetition. Only once said is more than twice forgotten. Mentally we are all children, and a good story grows more entertaining with every telling.

"The public must be told and retold about your ability to serve them. And each time the message must be delivered exactly as if it had never before been mentioned.

"On this foundation of essential facts all successful publicity is planned. By the grace of the printing press the message is given visibility and attractiveness that appeals to the eye. But the most favorable impressions gradually fade unless they are revived by the well-timed operation of the 'repeater.'"

This idea of constantly reminding the public of your ability to serve is sometimes called the "keystone of the advertiser's arch." To remind your trade that you are still in business not only has a direct present value, but it recalls to memory previous messages and keeps alive and working a past expenditure that would otherwise be already everlastingly dead and buried.

The best and most successful man in business is he who carries his business message wherever he goes, not only in person, but by letter and by every other act which brings him into association, either directly or indirectly with the public. These reminders are, of course, as varied in form as any other branch of advertising, but for effectiveness and economy, blotters and "stuffers" probably offer the greatest attraction. Yet

J. R. HUDSON READY TO START ON HIS HONEY ROUTE

these must be selected with some discrimination in order to return the results that should be expected from them.

The "stuffer," which to the uninitiated may be described as a printed slip the proper size to be inserted in an ordinary commercial envelope, is one of the cheapest forms of good advertising . It is not far amiss to say that every letter written on fairly good business stationery, costs, with the postage, in the neighborhood of 5 cents. Good stuffers may be had at $2 to $5 per 1,000, according to their style and the amount of matter they contain. This is a range of from one-fifth to one-half cent each. They add nothing to the expense of postage, and their efficiency is abundantly established.

So when you pay 5 cents to send a letter in which it would perhaps be entirely inappropriate to include the least bit of "business puffing," by the expenditure of not more than one-half cent additional you may, in the most appropriate and artistic manner, add your business message.

These are but elementary observations on the subjects treated. The subject of advertising is a large one, and one in which the inexperienced should take the advice of the best counsel available.

Co-Operative Efforts

By John Hendricks.

Read at the Annual Meeting of the Colorado Honey Producers' Association.

I HAVE experienced, first hand, this year some of the difficulties of the manager of a co-operative society. As business manager of our local farmers' union I was asked to find a market for the farmers potatoes. This business was entirely new to me. I procured a list of commission houses that make a specialty of handling potatoes in car lots, and got into communication with them. I then asked the farmers here who had potatoes to sell to list their crop with the union. This they were perfectly willing to do. Next I tried to learn what the farmers wanted for their potatoes. I succeeded in getting a buyer who said he would take all the potatoes the community had to offer at the price the growers had given me. As soon as I acquainted the farmers with this fact the value or potatoes rose in their estimation, and they then wanted 10 cents more per hundred weight. I again set to work to find some one who would pay the additional 10 cents. When I made it known that we had secured a buyer who would take the potatoes at this advanced price, other buyers were coming in who naturally met the price.

The farmers had required that the purchaser send an agent into the community to inspect the potatoes and pay for them when they were loaded. By the time my man arrived practically all the potatoes had been sold to other buyers, who would not have paid the farmers the price they received had it not been for the work the union did. When the buyer I secured reached our community there was only one car of potatoes left for him to pick up.

These farmers had listed their potatoes with the union for the union to sell. When the union found a buyer at the highest price asked, and other buyers began offering the same, the farmers who had listed their potatoes sold to the first buyer that came along offering this price. What complicated matters still more was that they did not report to the union the sale of their potatoes.

After having had this experience, I feel that I want to urge the members of any co-operative association to be more loyal in their support of the manager of the association. Success in co-operative effort cannot be achieved simply by having a shrewd man as business manager. The manager cannot attain the utmost success possible without 100% loyalty on the part of every member of the society. If the manager is anything like a competent man I feel safe in saying that he will strive to be perfectly just to all members, regardless of personalities, and the members of the association make a mistake, therefore, if they allow personalities, tempting offers, or anything else to stand between them and the association. When large buyers come we should do what a fellow member of the Colorado association in this locality did this season when a traveling man for a wholesale house came to negotiate for his crop. Instead of trying to make a sale, this party referred him to our manager.

I consider it our duty to keep the business manager fully advised as to what we expect our crop to be, and when the crop is harvested to report to him at the earliest possible moment the exact quantity of all grades. Then in case the quantity is reduced by local sales, we should keep him advised of the reduction. Not only should we keep him fully informed as to our crop for marketing, but we should also let him know promptly what our requirements in the way of supplies will be for the next season. On the day that the honey flow stops, any one of us could take a few moments to get together our needs in the way of the next season's supplies. If we would do this and send our estimate promptly to the manager it would surely be helpful to all concerned.

Any co-operative society as large as the Colorado Honey Producers' Association will usually have a volume of business to tax to the limit the ability of its manager. If we as members do not do our part promptly, we handicap the manager, and to that extent injure the association. And since we members are the association, when we do not do promptly and faithfully our duty toward the manager, we injure ourselves.

The Work of the Bee Division of the Dominion Experimental Farms

By F. W. L. Sladen.

(Continued from Page 229).

IT is possible to find locations where all these three principal sources of honey—clover, fireweed and goldenrod and aster—abound. Such locations have from ten to twelve weeks of possible honey flow, and should be ideal for honey production. It seems probable that, taking one year with another, selected places in these regions of successive honey plants may produce larger crops than the districts where the white honey flow is confined to clover and lasts only three or four weeks. In order to find out the value of these and other promising regions, I am starting co-operative experiments with enlightened beekeepers located in them, a colony of ascertained strength being kept on scales and the gain or loss in weight every day during the season being noted, together with the daily weather and

Down in Texas the heat in summer is intense. C. B. Bankston has rigged an umbrella holder for his convenience in the bee-yard and field.

much of the regular information supplied in the reports that we make of the apiary at the Central Experimental Farm, Ottawa, and those of the branch farms, such as notes on the honey plants and the yield per colony, spring count. Two such co-operative experiments have been carried on last year in the north country—one at Thornloe, near New Liskeard, by Mr. William Agar, who reports an average of 23 pounds honey crop per colony, spring count, and the other at a large apiary at Montcerf, Quebec, in the upper Gatineau valley, by Mr. Jos. Martineau, with an out-apiary at Lytton, six miles further north in a moister spot. The average yield for Montcerf last year was only about 65 pounds per colony, spring count, on account of the failure of the fireweed, but the average for the past seven years has been about 132 pounds, mainly from fireweed. In the best year, 1914, the average yield was 263 pounds per colony. In the poorest year, 1912, the average was 142 pounds per colony.

The average at Ottawa in 1916 was 228½ pounds per colony, spring count, the highest on record, and the average for the past four years has been 98.2 pounds per colony, the lowest being 46 pounds, in 1913 and 1914.

I have here charts showing the daily weather and gain and loss of a hive on scales last summer at these three places, and also at Ottawa. These charts show several interesting features. These three places represent large areas which as yet contain very few beekeepers. To get definite results the experiments must be carried on for a number of years to reduce to an average the great variations in crop from season to season caused principally by variations in weather. It is hoped that these experiments will also give us detailed information about the secretion of nectar of the principal honey plants under the different conditions.

In addition to the co-operative experiments above outlined, I placed two colonies for the season of 1916 on a barren sandy plain at Kazubazua, Quebec, where the best yielding species of goldenrod and aster and also blueberries abound. The weather during the blueberry and goldenrod flow was less favorable than average years, no period of settled, fine weather occurring. The total yield of one of the colonies was 241½ pounds, consisting of 64 pounds of blueberry honey gathered at the end of May, of an amber color and peculiar, though not disagreeable, flavor; 118¾ pounds of white honey gathered between that date and the 5th of August, principally from alsike, white clover, raspberry and kalmia, and 58½ pounds of honey from goldenrod gathered after August 5th, and containing a little buckwheat and juice from overripe blueberries. The other colony yielded a surplus of 280 pounds, consisting of 69½ pounds of blueberry honey, 146½ pounds of white honey gathered before August 5th, and 64½ pounds of goldenrod honey gathered later. A colony was also taken to Sully, a swampy location nearby, also containing much goldenrod. Here 34 pounds were obtained from blueberry, 132½ pounds of white honey before August 5th and 54 pounds of principally goldenrod honey after August 5th, a total of 220½ pounds for the season.

An out-apiary experiment to test the value of the sheep laurel, (Kalmia Angustifolia) was tried in the Annapolis Valley N. S. this year. A colony of bees was taken from our station at Kentville and placed in the middle of a bog covered with this plant. The bees gathered a larger surplus than any of the colonies at the Experimental Station. It amounted to 70 pounds of white honey which, however, had a ranker flavor than clover honey. The three best colonies at the station averaged only 35½ pounds. Bogs covered with kalmia occur in many places in the Maritime Provinces and Quebec and in several places in Ontario.

I will dwell more briefly on the honey-producing areas of the Middle West and of the Pacific Coast region.

The dominating feature of most of the prairie and of the dry belt of British Columbia is the dryness of the air and also often of the soil, especially in Southern Alberta and in Columbia. More honey is obtained in wet seasons than in dry. While white clover is probably at the present time the plant from which most nectar is obtained in this region and is spreading, the dry weather is not very favorable to its development and secretion. In moist years in Manitoba and around the cities and towns in certain districts in Saskatchewan and Alberta, such as Indian Head, Sask; Lacombe, Wetaskiwin and Edmonton, Alta., a considerable amount of nectar is obtained from this source. Besides white clover, there are a great number of prairie flowers that secrete nectar. Unfortunately, the majority of these flowers are too deep for the bees to reach the nectar and only bumblebees can obtain it. Two comparatively short-tongued species of bumblebees, Bombus terricola and Bombus occidentalis, bore holes at the base of the corollas to extract the nectar, and honeybees will visit these holes and obtain a little. The amount they get in this way is, however, insignificant.

More honey is obtained from the timber and scrub lands of the prairie than in the open prairie. The timber and scrub lands are usually in moist places and are but little cultivated. If we except clover, all the important sources of honey except alfalfa, which has proved to be of considerable value in Southern Alberta, are wild. Probably the most important wild honey plant of the prairie is the wolfberry, Symphoricarpus occidentalis, a low shrub, very like the snowberry. The nectar is easily reached by the bees, but very little is secreted in dry weather. It flowers in July and early August, and the honey is white and mild-flavored. Another valuable honey plant is the anise hyssop, Agastache foeniculum, flowering in July and early August. It is not found in Southern Alberta or British Columbia, but is well distributed from Winnipeg along the northern margin of the prairie to Edmonton and Lacombe. I found it so abundant between Tinsdale and Melfort, Sask., as to give the prairie here a blue tinge. Unfortunately, the flower is too deep for the bees to reach all the nectar. Another principal source of honey on the prairie is Hedysarum boreale, a plant related to the sainfoin of Western Europe, found throughout the prairie, but commoner northwards. It flowers from mid June to the end of July, and the nectar, though not secreted abundantly under some conditions, is entirely within reach of our bees. Fireweed is scattered through the timber lands and goldenrods of unknown value are plentiful in certain places. Alfalfa has produced about 100 pounds per colony in the apiary of the Experimental Farm at Lethbridge. Here high winds interfere somewhat with the work of the bees.

On the lower mainland of the Pacific Coast we find again white and alsike clover and fireweed to be the principal sources of honey, as in the east. All grow in luxuriant profusion in the Vancouver district, and in a season of favorable weather produce a considerable crop of honey, but during the last two years the honey crop has been a failure in this district, owing to the prevalence of cool, cloudy and wet weather during the honey flow. The beekeepers, however, live in the hope of a good season. Probably an average of 50 to 80 pounds of honey per colony, with good management, can be counted upon. In the Okanagan district, between Salmon Arm and Vernon, and at Nelson, the weather is warmer in summer, and probably an average of 50 to 100 pounds can be gotten from clover, etc., in these valley districts. These valleys are usually narrow and widely separated. In the southeast part of Vancouver Island we get clover and fireweed again. Here the summers are dry and sunny, though cool, and a moderate crop of good honey, sufficient to make beekeeping quite profitable as a side line, is almost certain every year.

Let me say, in conclusion, for the sake of the inexperienced beekeepers here present that the figures of yields I have given have been obtained by good management, and that the past summer was an exceptionally good one for clover honey production in Ontario, and let me repeat that it takes at least two years, usually longer, for a man to learn to manage bees successfully.

If the Bee Division can supply information to those who, after the necessary training, have become successful in getting a fair return in their home locality, information pointing out what locality conditions to look for in order to greatly increase their return, it will have accomplished some good. This is what I am working for in this experiment.

Ottawa, Ontario.

European Foulbrood

By C. C. Miller.

A CANADIAN correspondent is having trouble with European foulbrood and asks what to do. He seems a little uncertain as to the question of Italians and blacks as to immunity; has heard that I was successful in handling European foulbrood with hybrids; wants to know whether he should re-queen, etc.

It is true that I treated successfully hybrids as well as Italians that were affected with European foulbrood and do not feel at all in dread of the disease, although it is possible that a case may turn up almost any time, it being a well understood characteristic of European foulbrood that it is loth to desert entirely anyone with whom it has formed an acquaintance. But if one or two cases should occur in the course of a season it is a small matter to take care of them.

For the sake of this correspondent, and others as well, I will say just what should be done by anyone who finds European foulbrood in his apiary. Suppose the disease has got well under headway before it is discovered, and that a large proportion of the unsealed brood is of a yellowish tint, instead of being pearly white, as healthy brood should be. There will also be larvæ more advanced that are black and dead. The disease has been present so long that it is found in a large part of the colonies, and they have consequently become weak.

The first thing is to strengthen the colonies, and it is perhaps as well to wait until the season is a little advanced and bees are gathering all they need or more. Then double up, making two colonies into one, or, if it is necessary, making three or more into one, for it is absolutely necessary to have only strong colonies for treatment.

The next step is to make the strong colony queenless, killing the queen, for in a bad case it is almost certain that the queen has become too poor to be worth saving. At the same time that the queen is killed a ripe queen-cell may be introduced in a protector, or a virgin just hatched may be given, the cell or the virgin being of best Italian stock. Or, a young laying Italian queen may be introduced ten days after the colony has been made queenless.

That's all the treatment that's needed; just to make the colony queenless for about ten days and then to have the work of laying taken up by a vigorous Italian queen. It is possible that a queen of vigorous hybrid stock might answer, but some think there is safety only in Italian blood, and you may as well have the best.

The disease may break out again, but remember this: no wide-awake beekeeper will ever have a bad case the second time. For he will be on the lookout, detecting the disease before it has had time to become bad. So he will never again have anything more than a mild case, and in a mild case a little different course may be taken, provided a good queen is present. Cage the queen for ten days in the hive, and then free her. The bees will do the rest. But unless the queen is a good one, better treat as in the previous case.

It may be asked whether there are not Italians that are immune to European foulbrood, so that there is no danger of their taking the disease. I wouldn't like to be too positive about it, but I don't believe there is such a thing as bees that are immune to European foulbrood. There are bees that are more resistant than others, at least that will do more than others to clean up the disease; but they're not entirely immune. It may be, too, that in some mild cases the bees will clean up the disease without any help from the beekeeper, but you can't count on anything of the kind as a rule. But keep watch, and cage the queen for ten days before the disease gets much of a start, and you will conclude there's nothing very formidable about European foulbrood.

Getting the Queen to Lay in Wooden Cells

By Jay Smith.

IN Dr. Miller's "Answers" in the American Bee Journal, page 208, June issue, I notice a question by "Wisconsin" asking what the Swarthmore plan is to get the queens to lay in prepared wooden queen-cells, as mentioned by me in the "Beekeeper's Review," page 59, in an article "A plan for Better Bees and Queens." As I have received numerous inquiries concerning this, I believe a short sketch of the Swarthmore Plan would be of general interest to the readers of the American Bee Journal.

"Swarthmore" was the name under which the late Eugene L. Pratt, of Swarthmore, Pa., used to write for the bee papers. Mr. Pratt had developed queen rearing and baby nuclei to a very high state of perfection and was able to do many things that few of us are able to duplicate, and I feel that the beekeepers of America all owe him a debt of gratitude for his excellent work.

His method of getting the queen to lay in the wooden queen-cells is, in brief, as follows: A specially made, small wooden queen-cell is used. These are corded up into a little frame about the size of a 4x5 comb-honey section, after first being waxed the same as a regularly prepared wooden queen-cell. Two of these corded-up frames are placed into a small nucleus hive beside a third frame filled solidly with comb honey, leaving no place for the queen to lay except in the wooden cups. These are a little larger than a drone-cell, but as the colony is so small and needed to replace workers, the queen lays only worker eggs in them.

Mr. Pratt then allowed these eggs to hatch, and removed the wooden cells and placed them in cell holders and gave them to queenless colonies. I have found no advantage in this, as it was more work than the grafting method and no better results are obtained. I believe that if the cells were given to the queenless colony when they contained the eggs the very best of queens could be raised, as everything would be left to the bees, and the human element left out entirely. I have raised a few that way and they were most excellent queens, but the mysterious feature is that the bees will accept only a few, two or three, perhaps, but never more than four, and remove all the other eggs. They seem to think that where there are eggs there must be a queen and what is the use of raising two or three dozen queens when you only want one, and if this one should not hatch according to schedule, "Why, we will ask the queen to lay us another egg and we will try again."

In superseding a queen this same condition is observed. Sometimes eggs are laid in three or four superseding cells, but when they begin to hatch some of these eggs will be taken out. If anyone wishes to experiment on this he may possibly hit upon a certain condition where the bees will be delighted to rear large numbers of queens from the eggs, but so far they have failed with me.

A method that brings splendid results is as follows: Take a colony that has swarmed. Let them go back into the same hive they came out of. Remove their queen. Carefully cut out all queen-cells. Take the royal jelly from these cells and put it in a small glass dish. Dilute it with soft water until it is thin, about the consistency of royal jelly when fed to the larvæ just hatched. Put this into the prepared cell-cups. (I prefer those that are dipped by the Doolittle plan.). Now take larvæ about twelve hours old, put them into the cups and give thirty or forty to this colony to be finished. If this is properly done they will accept every one and the lavish manner in which they feed the larvæ is astonishing. The nurse bees seem to be chuck full of pap and are going around looking for something to feed. In a few hours after feeding these cells the young larvæ are fairly swimming in royal jelly.

A colony in this condition will not only accept these cells but will finish them in the best manner and will finish several batches of these, and no matter how many you give them they seem to think you did not give them quite enough and will start a few "on their own hook." So you will have to watch and cut these out for if one queen is left to hatch she immediately organizes a gang of wreckers and they begin operations on your fine batch of cells which but a few days ago they were so crazy to build. They will open them up at the side and drag out the young queens with the frenzy of an infuriated mob, and if a queen has developed to the stage that seems to warrant it, the queen at the head of the destruction gang will back down into the opening made in the side of the cell and sting (I believe) the un-

hatched queen. It has been stated by good authorities that the queen does not do this, but I have seen it done. I believe after hearing this testimony, if the reputation of the witness for truth and veracity is not impeached, an impartial jury would find said queen "guilty." The reader can be the judge.

Vincennes, Ind.

Art in Advertising

BY A. F. BONNEY.

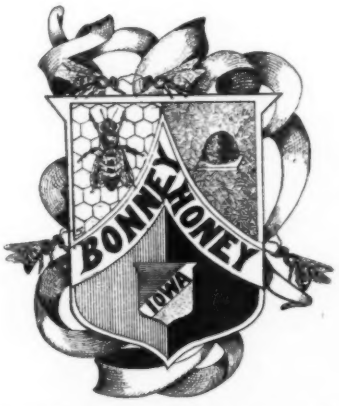
HAVING some idle hours this winter, I began studying a new sticker, and finally evolved a plate which I shall use, in different sizes as a label on cards, envelopes and letter heads. The one I shall use is the one which reads BONNEY HONEY.

One of the others reads:

BONNEY HONEY
PRODUCED IN IOWA

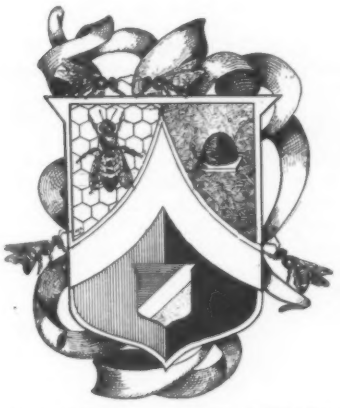
But Produced in Iowa is a long mouthful, so I made the other

BONNEY HONEY
FROM IOWA



and, finally, as IOWA alone tells the story, I evolved the square coat of arms, and observing people may see that I have called on the escutcheon, the bees, honey comb, skep and part of the alphabet. In *Dexter chief point*, the bee, where it logically belongs; in *sinister chief point*, the skep, as it is secondary; BONNEY HONEY in middle, in *honor and fess points;* and IOWA in *nombril* and *middle base points. Dexter* and *sinister base points* vacant. I used the escutcheon of pretense for IOWA, both for relief and to show that the name did not come from anything apicultural.

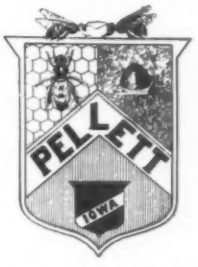
By using this escutcheon in the upper left hand of a letter sheet I can put whatever wording I chose to the right of it. To illustrate:



THE BUCK GROVE APIARY
Producers of
BONNEY HONEY
We try to produce the best extracted honey on earth.
And generally succeed.
Buck Grove, Iowa.

The wording of a letter-head is, of course, a matter of taste.

Because Mr. H. E. Roth, of Dexter, Iowa, adopted my suggestion of an alliteration in choosing a name for his



honey, I used QUEEN QUALITY as another illustration, and as his name does not appear as in BONNEY HONEY, I use his monogram in *sinister chief point.*

Buck Grove, Iowa.

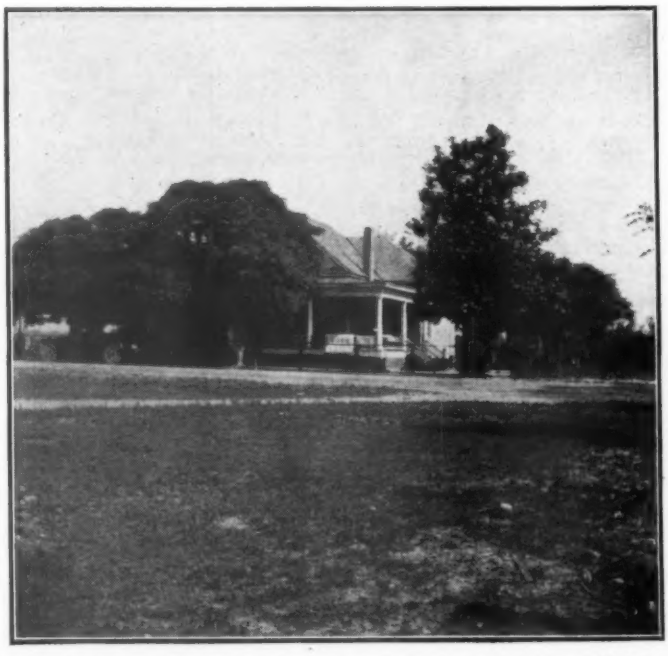
Southern Beekeeping

BY N. L. STAPLETON

ON May 14th, Mr. J. J. Wilder of Cordele, Ga., who is familiar to the bee fraternity as one of the large producers of honey in the United States, notified me that he had been requested to make a trip down the Appalachicola River and meet with the beekeepers of the tupelo belt, for the purpose of organizing an association, and requested that I make the trip with him.

Mr. Wilder came by and spent Sunday night with me and on Monday morning, the 14th inst., we took the boat at Bainbridge for Wewahitchka, Fla., where we arrived Tuesday morning about day break. At Bainbridge we were joined by Messrs. L. L. and A. E. Lanier of Wewahitchka, who had just sold their crop of honey to a Bainbridge Company. The tupelo honey producers have had an unusually fine season, the flow being exceptionally good and prices satisfactory. On the wharf at Bainbridge we saw over 100 barrels of tupelo honey, and on the wharf at Wewahitchka 41 barrels. Quite a lot had been shipped and there is a good deal yet to go. Our information is that practically the entire crop had been sold.

Mr. Wilder and I are under special obligation to the Messrs. Lanier, who took charge of us on Tuesday and showed us many courtesies. We met quite a number of prominent beekeepers at Wewahitchka, but space forbids the mentioning of all. Among others, we met Mr. S. S. Alderman, now over 80 years of age, who was one of the pioneer beekeepers of that section. Mr. Alderman informed us that he began keeping bees on a commercial scale in 1870. On Tuesday morning Mr. J. K. Isbell took us through his apiary of about 300 colonies all in one yard. Mr. Isbell's apiary is one of the prettiest the writer has ever seen. He uses a nine frame hive taking a Hoffman frame,



THE BEES HELPED TO BUILD THE NEAT LITTLE HOME OF N. L. STAPLETON, OF COLQUITT, GA.

and uses full depth supers, producing extracted honey exclusively. His hives are arranged in rows on stands about 18 inches from the ground. His honey house is on the river bank with his extractor in the second story and tanks underneath. He has a tramway leading from the honey house to the boat landing.

In the afternoon Mr. J. R. Hunter, who is a son-in-law of Mr. Isbell's, took us in his car down the river about three miles to his apiary, where we also found everything well arranged and convenient.

About three o'clock we met in the Woodman's Hall and organized the Tupelo Honey Producers' Association, Mr. J. J. Wilder being elected President and Mr. J. R. Hunter, secretary.

A committee consisting of J. J. Wilder, J. K. Isbell and C. F. Glenn was appointed to make investigation and submit a plan at an early date for the organization of packing plants and selling exchange to handle the 1918 crop. This committee is to report as soon as they can perfect plans. It was the general opinion of the members composing the association that a corporation ought to be formed to handle this proposition, similar to the fruit exchanges in Georgia and Florida. I failed to secure the names of all of the beekeepers who were present at the organization of this association.

On our return trip we felt very much at home, as we had 275 colonies of bees, and 132 nuclei on the boat. Mr. W. H. Gibson was sending 90 colonies to Bainbridge for the summer flow in that section, while Mr. F. W. Summerfield of Toledo, Ohio, and his assistant, Mr. Guy Gallup, were carrying 185 colonies and 132 nuclei to Toledo for the clover flow. These bees were loaded in a stock car at Bainbridge on Wednesday afternoon and left that night for Toledo in charge of Mr. Gallup. Mr. Summerfield, who has been engaged in migratory beekeeping for the past three years, has been very successful. His tupelo crop this season was 90 barrels of honey. He left 175 colonies and 400 nuclei to remain here for the summer. The nuclei which he was shipping were put up in wire cages each of which held one full depth comb of capped honey and from two to three pounds of bees. He informed us that he had shipped nuclei put up in this way as far north as Canada this season very successfully.

Mr. Wilder took the train at Bainbridge for Cordele, where he expected to remain a day or so before beginning a trip of inspection through his apiaries, located in south Georgia and Florida.

Colquitt, Ga.

Possibilities of Beekeeping in Northern Montana

By L. E. Baldwin.

A NEIGHBOR of ours, having been a beekeeper in Pennsylvania for many years, made inquiry as to the possibilities of beekeeping in Northern Montana. He was assured by a number of the old-timers that the severe winters, together with the short summers spelled death to the bee and loss to its keeper. This idea has generally prevailed and it surprises many to find proof to the contrary in the shape of well wintered colonies, populous hives and surplus stores of honey, amounting to more than 100 pounds to the colony.

The honey consumed in Northern Montana is shipped in from the Yellowstone and Musselshell Valleys, and from the Pacific Coast states. But with at least three others in this section (30 miles west of Great Falls), we have proven to our satisfaction that honey in sufficient quantities, not only for home consumption, but for commercial purposes, can be profitably produced by anyone who will give a little care and attention to details.

There are, no doubt, in Montana, a number of people who have kept bees in the east and south and doubt the possibilities of success in this northern latitude. We wish, therefore, to give a concrete example of what was realized in our experience.

In the spring of 1915, we secured five stands of bees from a gentleman who had shipped them the previous year from Iowa. They were mostly blacks and hybrids and only three of the five were in modern hives. Foundation had not been used in the frames and the combs were so crooked that we could not control swarming or eliminate the hybrid queens. As we were very busy on the ranch, we could give but little time to the bees. However, in spite of frequent swarming, lack of supplies and proper care, the returns at the close of the season were very gratifying. We secured 400 pounds of comb honey and the number of colonies increased to eleven, besides which several swarms absconded and two were sold. The eleven colonies were put in the cellar about Christmas time and taken out the following March.

We therefore started in the 1916 season with eleven colonies, six of them in modern dovetailed hives with straight combs. As soon as the warm weather of May and June permitted, we transferred the bees from the old hives to new ones. We also introduced two Italian queens and began a war on drone-combs.

The summer of 1916 was unusually short and cold. We had to feed the bees well up into June to keep them from starving, since if they left the hive in search of honey they would chill and die before being able to return. Some colonies dwindled to such an extent that we feared they would be entirely lost. However, the latter part of June proved fairly propitious and with good care the colonies gained rapidly. Alfalfa and sweet clover furnished plenty of nectar and by July 10 the hive bodies were full and the storing of surplus was begun in the supers. The flow continued without interruption for about seven weeks, during which time we so manipulated the hives that we had no natural swarms, but increased the number of colonies to twenty-five. We had also purchased in May) two 2-frame nuclei, which built up rapidly and made strong colonies by fall, as well as securing a large amount of surplus honey. These last two raised our total to twenty-seven colonies.

Having decided to run for extracted honey, we purchased a machine in September and with it extracted 1,000 pounds of honey. This was put up in three-pound glass containers, making a fancy article of merchandise. Besides this, we had some 300 pounds of comb honey, a total of 1,300 pounds, all of which was the product of thirteen hives, as the new colonies made no surplus.

Our honey is water white, very thick and heavy, and is extracted with considerable difficulty.

We believe the above record will

PARTIAL VIEW OF J. K. ISBELL'S APIARY AT WEWAHITCHKA, FLA.

compare favorably with that of any section of the Northern states.

Fort Shaw, Montana.

Producing Saleable Honey

By Arthur C. Miller.

IT is easy enough to "keep bees," but to make them pay is a different matter. About the first bit of instruction given to the novice is to get his colonies strong as early as possible, and as most of the instructions have been written by beekeepers in the regions where clover affords the main yield, the instructions have all centered on securing that crop. But there are vast regions where clover is not the main crop and other regions where it does not grow, and where to work to get the colonies strong, early, is labor wasted. To meet with the greatest success the colonies should be strongest when the most desirable flow comes, be it early or late. Langstroth used to say: "Keep your colonies strong," and taken intelligently his advice is right.

There are many ways of doing it, so many that they are confusing to the average beekeeper. The prime requisite is a young and vigorous queen of a good strain, and the secondary is good combs. Given these and not too much manipulation the colonies will be ready when the flowers are.

Different sections produce different honeys, some fine, some good and some indifferent or poor, so the first thing for the would-be successful honey producer to do is to find out at what season the good honeys are secured. This is easily done by sampling the new honey whenever the bees are storing a surplus and tracing the bees to the flowers whence they get it. It is often quite as important to learn when the poor honey is gathered in order that the good may be secured separately from it.

When it comes to determining what honey is "good" many beekeepers will find themselves decidedly puzzled. They think one good while other persons do not like it. One palate is pleased with a strong flavored honey, another wants something almost flavorless, just merely sweet.

In most regions good honey is secured from several sources, some, perhaps, coming early in the season, others late and not infrequently poor honey coming in between. Perhaps the beekeeper does not secure enough of any one kind to supply his customers on one sort, and later gives them of the later crop only to have fault found because the honey tastes differently. The remedy is to hold all of the honey until the end of the season and then "blend" it.

No fixed rules can be given for blending. The proper proportions will have to be determined by experiment. Keep trying until it seems right, then "try it on the dog," which is to say, pass samples of the blend around among people and get their opinion. Eventually a combination will be secured which fits the palate of the community.

It sometimes happens that all the honeys of a region are too strong in flavor to be pleasing for steady consumption and then it is necessary to buy a mild honey from some other region and soften the flavor by blending the strong with it.

The above advice will be understood to refer to extracted honey. This form of honey is steadily crowding out comb honey, and for several reasons. First, successful production of comb honey calls for more skillful beekeeping; secondly it calls for a location where the honey flow is rapid and profuse, and, thirdly, it calls for more pains and care in preparation for market and in delivery than the average beekeeper seems able to give it. Also many consumers do not like the wax and want the honey so it can be used as syrups are used.

But even in locations where the honey flows are not conducive to successful production of comb honey on an extensive scale it is often possible to secure some choice comb honey which commands fancy prices.

The writer has proved the value of the advice above given. He has developed a blend of honeys which seems perfectly adapted to the local market. It is liked; repeat orders and new customers are the order of the day and the honey sells for 20 per cent more than any other honey on the market. And yet the region where it is produced is not considered a good honey section. As a whole it is not, but some parts of it at some seasons of the year give honey of exceptionally fine flavor, some of them a trifle too pronounced for steady eating, but ideal when used in the right proportion in a blend.

And in a few sections he secures a modest yield of comb honey from each hive, but this honey is a natural blend, the bees getting it from three or four sources at the same time, and the quality is so fine that it commands a very high price and is all engaged a year in advance. It pays to go to a lot of trouble to secure it and even the modest per-colony yield returns in cash much more than the large per-colony yields of some other sections.

Study the honeys of your neighborhood and work your colonies to secure all they can of the best.

Providence, R. I.

Handling Bees at Night

By E. M. Cole.

ON page 235 of "Beekeeping,' by E. F. Phillips, is the following statement: "Bees should never be handled at night." I wonder if Dr. Phillips ever tried handling bees at night. During some mild weather last October I examined, and where needed fed, some fifty colonies by lantern light with more comfort to myself and seemingly less disturbance to the bees than ever resulted from a daytime handling.

I kept the light back of the hives, opened them carefully and used but little smoke. A few bees crawled out at the entrance, but practically none from the top of the hive. The bees gradually drew down below the top bars, probably to better protect the brood from the chill air.

To be reasonably sure each had a queen, the brood-nest was opened enough to find brood.

One hundred solid combs of white clover honey had been saved and wherever needed were inserted next to the brood-nest.

I had never before saved combs of honey for fall or spring feeding, and what a pleasure such feeding is to both bees and beekeeper!

This spring we had some mild weather about the twentieth of March. Fifty colonies were again examined by lantern light, and without the least trouble. A veil was not necessary, and with some colonies not even smoke. They just settled down on the brood and stayed there.

I have never tried handling bees at night in hot weather; they might then have more tendency to crawl out at the top of the hive.

Audubon, Iowa.

BEE-KEEPING FOR WOMEN

Conducted by MISS EMMA M. WILSON, Marengo, Ill.

COLOR OF PURE BLOOD ITALIAN DRONES

What should three-band Italian drones look like? Are they uniform in appearance? Should they run darker than the queens? I am trying to Italianize, and find it difficult.

Mrs. M. C. Long.

Italian drones vary greatly in color, with little reference to the color of the queen, and indeed there is not entire uniformity in the appearance of the queen. Some Italian queens are as dark as black queens, while others are light; yet one may be as pure as the other. So in trying to decide as to the purity of blood the appearance of both queen and drones is pretty much a negligible quantity. The test is in the appearance of the workers. If they have three yellow bands, that is all that is required. It should be added that one of the three bands, the one toward the head, is rather indistinct, and if the bee is quite empty of honey this third band

may hardly be noticed.

You say you find it difficult to Italianize. It is a matter of time and patience generally, for with black or hybrid blood all about you it is impossible for you to have your young queens always purely mated, and the only way is to breed constantly from pure stock, buying a new queen as soon as the old one dies. You can also help matters by suppressing all drones except the Italians. But if the number of colonies in your apiary bears a small proportion to those of impure blood surrounding you the work of Italianizing will be a matter of years.

Yet there is one encouraging item. It is that the first cross makes as good gatherers generally as the pure bloods. One very successful beekeeper makes no pretense to keeping pure stock, but rears all his queens from pure mothers, regardless of how they may mate.

GET EVERY COLONY READY FOR SUPERS

Referring to "Notes by the Way," on page 243, the rule practiced by Dr. Miller still holds good, at least in this locality.

It is true that if the bees are left entirely without attention some colonies will not be ready for supers for some time after white clover begins to bloom, while others will swarm before that time unless they be given room.

But why let your bees remain in such a condition? Why not equalize your colonies and have them all ready for supers at the beginning of the white clover harvest?

That is what we aim to do, and it is seldom that every colony in our apiary is not ready for supers when the white clover harvest begins.

GETTING QUEEN CELLS STARTED

For the every-day beekeeper there is, perhaps, no better way to get queen-cells reared than the one given in "Fifty Years Among the Bees," of which such a beautiful picture was given not very long ago on the first page of the cover of the American Bee Journal. That was a picture of a frame of cells gotten up by the Dadants, and Dr. Miller thought they beat him at his own game.

But that plan requires some preparation in advance, and it may happen at some time that one does not want to wait to have a new comb built on which to have cells started. Or, if one has only a few colonies, one may prefer to have cells started on one or more of the regular brood-combs. An easy way is to take away the queen with two or three frames of brood and adhering bees from a strong colony having one's best queen, leaving the bees to start cells anyhwere they like. The trouble is that they will like to start them in a number of frames instead of in one particular frame, and will be pretty sure to have some of them started on opposite sides of the same comb, so that they will interfere with one another in the cutting out.

To avoid these troubles Dr. Miller decided to try having cells built on a comb lying horizontally. A good deal was said about this plan a few years ago, but for some reason it does not seem to have gone into general use, possibly because appearing too troublesome. As we have used it, however, last year and this, it is very little trouble, and as some of the sisters may want to try it, it may be well to tell in detail just how it is done "in this locality."

The machinery necessary is a shallow super to contain the one comb lying flat, and a rack to support the comb. The super is the width of the hive, three inches deep, and the inside length is a little more, say one-quarter inch more, than the length of the top bar of a brood-comb. The rack is a sort of ladder having two side pieces 14 inches by 1¼ by ⅜, and three rungs 9x1x⅜. The long or side pieces are nailed upon the ends of the rungs, one rung being in the center and each of the others 4 inches distant from the central one. When in use this ladder is to be laid upon the top bars of the frames in the brood-chamber, and the edges of the rungs come flush with the edges of the side pieces on top, leaving one-quarter inch space below between top bars and rungs. That is so that the rungs will not be glued to the top bars. Let it be especially noted that all these measurements are more or less by guess, and it is possible, indeed probable, that some of them might be changed to advantage.

Having the shallow super and the rack ready, we are now ready to go to work. We fill a hive with combs entirely empty, or they may contain some honey, or even sealed brood, but no unsealed brood. On the whole it is perhaps better not to have any brood at all. Over this hive is placed our shallow super, and in the super is placed the rack, being sure that the rack is right side up, so that there is a space between the rungs of the rack and the top bars. On the rack is placed a frame of brood taken from the colony that has the best queen, this frame being one that contains the largest proportion of brood just hatched from the egg. If there is any difference in the two sides let the best side be down. Call this hive A. Set it in place of B, which may be any strong colony, and set B on a new stand. Brush into A all the bees from three of B's brood-combs, of course taking care not to get the queen. Then cover up B and leave it for ten days, when the cells will be ready to cut.

You will now find your advantage in the fact that instead of having to handle and examine all the combs of a colony, you have to do with only one comb. Moreover the cells are on only one side, standing straight out from the face of the comb, and with the small blade of a pocket-knife you can cut out a cell and leave a hole only a third as large as when the cell is built on a comb hanging in its usual position. It is claimed that you get more cells in this way, which may be true.

Someone may say "But you have said nothing about preparing the comb by scraping to the bottom alternate rows of cells, as has always been directed." No, we do nothing of the kind, simply using the comb as it is. We are not convinced that the other way is any better. At any rate we get good results and are saved the extra bother.

INTRODUCING QUEENS

My experience may not be conclusive, as I have only used it this year, but I have lost no queens introduced in this way and I find it much less "messy" than the honey method. The first queen came from Alabama, a Golden. I felt very choice of her. I seldom use smoke about my bees. I

A JULY SWARM CAPTURED BY S. L. CORK, AT PERU, ILL.

hate it much worse than the bees do, also tried it for introducing the year before and failed. This is what I did this year: I hunted out the queen in the hive I wanted to re-queen and took her and a frame of brood to a new place. I filled my aluminum clothes sprinkler with water and into it I put enough oil or anise to make it smell strong. I opened the hive and sprinkled the frames thoroughly, enough so that I knew some of it ran down onto the bottom-board, and I sprinkled the entrance. I then took my queen cage and sprinkled that so that queen and attendants were well sprinkled, then I opened the cage and tucked it in between frames where the frame of brood had been taken out, put on the cover, contracted the entrance and left them. Next morning I examined them and found them all one happy family.

The next experiment was similar except that I took two frames of brood, bees and honey and placed them in an empty hive, sprinkling with peppermint water instead of anise, this hive was placed on a new stand. Again I placed two frames of brood sprinkled with peppermint water on the old stand, moving the old hive away. I felt a little doubtful of how the returning field bees would like the innovation, but apparently finding no mother of their own and rather liking the flavor of the new hive, they decided to do the best they could with what they had left and so made no trouble. Perhaps next year I may lose them all, but it seems to me that the principle of the thing is the same as that of the honey method, only that it is much less sticky to perform. I prefer the peppermint, as the anise might possibly entice robbers. I like peppermint in my winter candy, also. JEAN WHITE.

MISCELLANEOUS NEWS ITEMS

Pennsylvania Meeting.—The Pennsylvania Beekeepers' Association will hold a meeting at the apiary of L. K. Hostetter, five miles northeast of Lancaster, on August 16. All persons interested in beekeeping are invited to attend.

L. K. HUBER, Chairman.

Eastern Massachusetts Meeting.—The Eastern Massachusetts Society of Beekeepers is to hold its annual field day at the Independent Agricultural School at Hawthorne (Danvers), Mass., on Saturday, August 11.

The Annual Field Meeting of the Chicago Northwestern Association will be held on Tuesday, August 14, at the home of the apiary of the President, Mr. E. S. Miller, of Valparaiso, Ind. The day will be taken up with various talks and demonstrations of interest to beekeepers. The Ladies' Aid of the Christian church will serve dinner at noon, at the church, two blocks north of the court house. The dinner will be 50 cents a person. All who expect to attend will notify me at least three days in advance, as the ladies require that much time and number expected so they can prepare accordingly. The apiary is located just outside of the city, east, about a mile from the depots. Mr. Miller or myself will try and meet all incoming trains till noon with autos and escort beekeepers to the apiary. Valparaiso is located 44 miles southeast of Chicago, on the Grand Trunk, Nickel Plate and Pennsylvania railroads. We also have interurban lines from Crown Point, Gary, Chesterton, La Porte and South Bend. We will not meet interurban cars, but if you wish to ride to the apiary call phone 571 R and we will meet you. President Miller is the man who operates 400 colonies of bees in five yards, working on an average of two days a week. He will show and explain his system of management, which you will all want to see.

JOHN C. BULL, Sec.-Treas.

Death of Mrs. H. S. Duby.—Mrs. H. S. Duby, of St. Anne, Ill., passed away July 3, aged 51 years. She was a beekeeper from youth. While still in her teens she persuaded her father to adopt the movable-frame hive, and she did practically all the transferring alone, in the operation saving $30 worth of beeswax. When she married H. S. Duby she married a beekeeper, and together they went into beekeeping in earnest. She never wore gloves or veil and seldom used smoke, as she knew how to handle bees so as to provoke them the least.

Mrs. Duby often entertained beekeepers, including the editor, who still remembers her charming hospitality. She will be missed by many who were in the habit of calling on her during "swarming time." Her husband has the deserved sympathy of the fraternity.

Ohio State Meeting.—On Thursday and Friday, September 6 and 7, at Wilmington, Ohio, will be held "Ohio's Greatest Field Meet." The full program follows:

Thursday, September 6

10:30 a. m.—

Prayer—Rev. J. J. Richards.

Minutes of Medina meeting—Ernest Kohn, Grover Hill, O.

President's Address — Melville Hayes, Wilmington, O.

Educational Value of Inspection Work—A. C. Ames, Weston, O.

Appointment of Committees.

1:30 p. m.—

Cuban Bee Industry—D. H. Morris, Springfield, O.

Queen Rearing—J. P. Moore, Morgan, Ky.; Fred Leininger, Delphos, O.; Mel Prichard, Medina, O.

General Discussion—Free for all.

7:30 p. m.—

Prevention of Swarming—C. P. Dadant, Hamilton, Ill.

What Ohio State University is Doing for Beekeeping—Jas. S. Hine, Columbus, O.

Successful Beekeeping—E. R. Root, Medina, O.

Friday, September 7

9:30 a. m.—

Meet at Walker Memorial Building for automobile ride over Clinton County, under auspices of Wilmington Commercial Club.

Opera House , 1:30 p. m.—

Mother Goose's Melodies (Paraphrased)—Mrs. G. P. Phillips, Washington, D. C.

Flowers (Pollenization and Cross Pollenization)—E. R. Root, Medina, O.

This meeting will be attended by pupils of Wilmington Public Schools under charge of Prof. E. P. West, Superintendent, and by the ladies of Wilmington.

Walker Memorial Building, 7:30 p. m.

Wintering—Dr. E. F. Phillips, of Bureau of Entomology, Washington, D. C.

Question Box—E. R. Root, Medina, O.

Sweet Clover as Chicken Feed.—One of our French correspondents, Mr. Lefeuvre, suggests the use of melilot hay, ground fine and mixed with bran, as feed for chickens. He bases the advice upon the experiment of a miller who tried it.

UNITED STATES DEPARTMENT OF AGRICULTURE

Bureau of Markets
Semi-Monthly News Bulletin
Honey—No. 3

Washington, D. C., July 13, 1917.

This is the third of a series of similar reports which will be issued by this office on the first and fifteenth of each month during the honey shipping season. The information is secured by representatives of the office located in the markets, and is transmitted by wire to Washington. For the present the bulletins will be issued only from Washington. These bulletins will be sent by mail free to any persons requesting them. All inquiries should be addressed to Chas. J. Brand, Chief.

Telegraphic Reports From Today's Markets—Jobbing Prices

(L. C. L. prices on large lots to jobbers).

New York—6 barrels Florida, 38 barrels and 17 cases West Indian, arrived; no comb honey arrivals. Extracted stock: market active, demand good, stronger; active buying for Italian export, resulting in wide range in prices; Southern: 12-13c; some sales reported at 15c; West Indian, 12-14c; some 15c per pound. Beeswax: Arrivals unreported; supplies adequate; demand light; yel-

low, mostly 45c; dark, mostly 43c per pound.

Kansas City—Local receipts, about 25 cases new honey; old crop, supplies practically exhausted; demand good, movement moderate, market firm, all sales in small lots. Native Missouri old stock: Firsts, 24-section cases, mostly $4@4.25; seconds, supplies exhausted. New stock: firsts, mostly $4.25. Supplies extracted stock exhausted. New crop late this year and will be very light.

Chicago—No car lot arrivals; Supplies-- practically exhausted, not enough to make a market. First shipment new, few cans Minnesota; rather light color, 12c. Old extracted: few sales; 12@13c per pound.

Cincinnati—1 car California, 32 crates Georgia, 75 pounds each, arrived. Light local receipts. Market very unsettled, few sales. Comb honey: old light amber, $3.60 per case; no new stock on market. Extracted, old stock: dark amber, 13c; light amber, 15c. Nearby: new honey, few sales; small lots; cash paid to beekeepers, extracted dark honey, amber, 8½c per pound. Nearby honey expected to move heavily in two weeks.

Philadelphia—33 barrels Southern extracted; no imports; no comb honey arrived; no demand, no sales. Quotations reported are merely asking prices. Extracted: jobbing in barrels: Southern, 10@12c; California, light orange, 60-pound tins, 13c per pound. Comb honey, no quotations.

St. Louis—No fresh arrivals. Bright amber in barrels, 8½c; in cans, 9@9½c; dark amber, ½@1c less per pound. Comb in case: amber, 10@12c per section; dark and inferior, 9@10c. Fancy clover, 14@17c per section.

Minneapolis—No new stock arrived. Supplies old stock practically cleaned up. Few sales.

St. Paul—No new stock arrived. Supplies old stock practically cleaned up. No sales.

Denver—Unreported.

CHARLES J. BRAND, Chief.

Alsike Clover.—Geo. W. Williams, of the United Honey Producers, suggests that every beekeeper make it his business to learn of the combination of grasses in which is included alsike clover, that will make the best hay and then try to get these planted by local farmers by publicity in the local press. Alsike clover is a mighty good honey yielder, as those acquainted with it will testify.

TO WISCONSIN BEEKEEPERS

Owing to the high price of food products the 1916 honey crop of the United States is short and buyers will pobably pay better prices for the 1917 crop.

It is the duty of every Wisconsin beekeeper to produce as much honey as possible this season. In order to do this, allow but little swarming or increase in colonies and furnish an abundance of room in the hives. In case your bees, or those of your neighbors, are diseased, you should report at once to the State Department of Agriculture at Madison, so that they may be treated in time to secure honey crops this year.

The U. S. Department of Agriculture has promised to include bees and honey in the several market reports. Dr. E. F. Phillips, of Washington, D. C., has issued many valuable circular letters to beekeepers of late and if you have not received them, let us know at once, so that your name may be placed on the mailing list.

In order to demonstrate the possibilities of Wisconsin beekeeping the State Beekeepers' Association is offering the following premiums:

Comb Honey—For the greatest number of pounds of comb honey in sections from single colonies of Wisconsin bees, not including any increase of colony, four premiums will be offered, as follows:

1. 1917 Revised Edition of ABC and XYZ of Beekeeping, 830-page volume.
2. Rauchfuss foundation cutting box with special knift.
3. 1917 Edition of American Bee Journal.
4. Three pounds of thin comb foundation for comb honey.

Extracted Honey—For the greatest number of pounds of extracted honey in glass bottles from single colony of Wisconsin bees, not including increase of colony, four premiums will be offered, as follows:

1. 1917 Revised Edition of ABC and XYZ of Beekeeping, 830-page volume.
2. Frame wedge driver and wire embedder form. Very useful.
3. 1917 Edition of American Bee Journal.
4. Four pounds of brood foundation, prepaid.

Apply to N. E. France, State Apiary Inspector, Platteville, Wisconsin, for rules governing the contest.

The first premium lot of comb honey (also first premium lot of extracted honey) is to be sold at market price September 3 (Labor Day), and will be on display September 10-15, at the Wisconsin State Fair. After that date it will be on display at the University of Wisconsin and at the next State Beekeepers' Convention at Madison. A full report from each contestant will be required, copies of which will be printed and distributed among members of the State Association.

Cross Bees.—After several years of effort to weed out the cross bees in my apiary I was congratulating myself that I had about succeeded. Every colony was headed by an Italian queen last season. After the heavy honey flow of 1916 many queens were superseded and several mismatings resulted. Of course there were some cross bees again this season, but not many. Following the flow from dandelion came a time when little honey was coming in, then, bless you, they were all cross. The hybrids were as cross as the very old Nick, and the Italians, which I had been showing off by opening the hive without smoke, were little better. The only exception which was conspicuous in the whole yard was a colony of bright goldens. Here we have been talking about bad tempers as the predominant golden trait, but this colony is gentle when everything else is on the war path. This particular colony is from a yard where special care has been taken for years to breed only from the gentlest colonies which are at the same time good honey gatherers. It really looks like it is possible to accomplish something very definite in the improvement of bees by careful selection, within a comparatively short period of time.

Nebraska.—I have just returned from a 600-mile auto trip through Eastern Nebraska. The clover becomes more abundant as one goes north. In the vicinity of Omaha it is very spotted. In some places white clover seems very abundant, while a little farther on there is very little. The same is true in southwestern Iowa. The Elkhorn valley from Fremont to Norfolk offers some very attractive locations which are apparently entirely unoccupied. If appearances are not deceptive there is room for thousands of colonies of bees in this valley, with dependable forage in sight. Dandelions furnish an abundant early flow, followed by white and alsike clover. What the sources of fall honey may be I could not entirely determine, but a fall flow is quite likely in a valley of this kind.

White clover is extending its range westward quite rapidly. Near the little town of Chambers in the southern part of Holt county, are some neighborhoods where both white and alsike clover are present in abundance. Sweet clover is also growing commonly along the roadsides and to some extent in the fields. There are but few localities all the way from Omaha to O'Neill where sweet clover is not common along the roadsides. Judging from reports from this section the yield is heavier and more dependable than further east. There is a home market for hundreds of tons of honey right at hand in the Elkhorn valley. With forage and market at the door, it is surprising that more beekeepers are not to be found there. F. C. P.

Virginia Creeper.—There are numerous plants which secrete nectar in abundance which would be valuable sources of honey if only they could be planted in sufficient quantity. On the Fourth of July the Virginia creeper on the arbor in our doryard was in bloom. There were hundreds, yes thousands, of bees humming among the blossoms. There are few plants that attract bees in such numbers to a small amount of bloom as does the Virginia creeper.

This plant, Ampelopsis quinquefolia, also known as American ivy and sometimes as woodbine, is an attractive climber which is very valuable for covering porches, trellises, etc. The flowers are small and unattrac-

tive except to the bees, but the foliage is sufficient to recommend it to those wishing climbing vines. Few plants are as hardy in our climate as this.

New York Honey Producers—The Western New York Honey Producers' Association will hold its annual field meeting and basket picnic on Saturday, Aug. 11, 1917, at the apiary of J. Roy Lincoln, which is located on the Saunders Settlement or Niagara Falls-Lockport road just outside of the city line, or ten minutes' walk from the north terminal of the Niagara Falls, Eleventh Street trolley line.

There will be demonstrations of extracting with a power outfit and addresses on the use of honey and the various phases of beekeeping.

Bring your basket lunch and your friends, honey consumers as well as beekeepers. A cordial welcome to all.

WILLIAM F. VOLLMER, Sec'y.

DR. MILLER'S ANSWERS

Send Questions either to the office of the American Bee Journal or direct to DR. C. C. MILLER, MARENGO, ILL.
He does NOT answer bee-keeping questions by mail.

Evaporating Honey

Last summer I extracted a quantity of white clover honey from sealed combs. The honey seemed to be of excellent quality; but when I weighed it I found that it weighed a scant 11 pounds to the gallon. According to my information it should weigh 12 pounds to the gallon. Ought this honey to be evaporated until it is of the required density before it is offered to the trade?

If it should be evaporated, what is the best way of doing it? MINNESOTA.

ANSWER.—Honey as thin as 11 pounds to the gallon, no matter how good the quality, is in danger of souring, and having regard to your reputation and future sales, it will not be the wisest thing to put it on the market.

It matters little how you evaporate it so that you do not injure it by overheating. If the quantity is not very large, you may set it on the back of the stove, where it may be heated through several days without ever getting very hot. You may also set the vessel containing the honey in another vessel containing water, and then you can set it in a hotter place.

Transferring—Ripened Honey

1. I caught a large swarm of bees and put them in a box with a few frames in it. They took very well to their new home and built some beautiful combs from the cover down. I have ordered a hive from Dadants. Would you advise me to transfer my swarm to the new hive or should I save the hive for another swarm which I think will come from this one? I examined the comb they built and saw the most of them were already capped. I caught the swarm April 7, and they certainly have worked wonders since that time.

2. What is meant by "honey should not be extracted when first harvested. Give it time to ripen." How long will it take to ripen and how will I know when to take it out? LOUISIANA.

ANSWERS.—1. If the colony is likely to cast a swarm this season, you may do as well to leave the bees as they are and hive the swarm in the new hive. Then in three weeks you can break up the old hive. But if it was a *swarm* of this year that you captured, it is not very likely they will swarm before next year. If you have had some experience in transferring, it may be better to transfer as soon as you can; otherwise it may be better to wait until the colony swarms next year. Something, however, depends upon the frames, in which the combs now are. If they are such that they can be lifted out easily, the work of transferring would be made easier, making it advisable for you to transfer at once. You see it's a bit hard to advise what is best without knowing all the circumstances.

2. When honey is first gathered it is very thin, and unfit to be extracted. Gradually it becomes thicker until it will weigh about 12 pounds to the gallon, when it is called "ripe." When very ripe it strings out in threads. When you have a little experience you will know by sampling it whether it is fit for extracting. In the meantime you are pretty safe in saying that honey is "ripe" when it is all sealed, and indeed there is little risk in extracting it when three-fourths sealed.

Diarrhea

1. I lost two colonies of bees last winter, although they had plenty of honey. At the entrance of the hive there were brown specks, and when I smashed one of the dead bees there was a brown substance that came from it. What was the matter with my bees?

2 Will this hive with its comb and honey be all right to use again? NEBRASKA.

ANSWERS.—1. The bees were apparently affected with diarrhea, and the brown spots at the entrance and the brown substance you saw when you smashed a dead bee were the same thing, that is the contents of the bees' bowels. The best cure for diarrhea is for the bees to have a flight so that they may have a chance to discharge the contents of their intestines. Of course, you are dependent on the weather for that. Have your colonies go into winter quarters strong in bees and well supplied with good honey, give them good protection, and you will have done your share toward preventing an attack of diarrhea.

2. Brush out the dead bees, scrape the filth off the frames, and it will be all right to hive a swarm into the hive.

Queenless Colony—Pound Packages Put on Old Combs

1. How can a beginner tell in early spring that a colony is queenless?

2. We are getting bees (3-pound packages) with queen shipped in from the extreme South. We intend turning them on 10-frame old combs which have plenty of honey, but some of them are moldy. Would this be all right? IOWA.

ANSWERS.—1. You cannot tell until time for the queen to begin laying; but that is quite early. Indeed, there is sealed brood in the hive as early as you would be likely to want to look into it. If you find this brood is sealed with flat cappings, you may count that a good queen is present. If you find brood in worker-cells with cappings rounded over, looking like little bullets, then a drone-laying queen is present. If you find some of the brood in worker-cells sealed flat and some of it rounding, that indicates an old, failing queen, and if a large proportion of the brood is shown to be drone-brood by the rounding cappings, you may about as well count the queen worthless and unite the bees with others.

2. Yes, but it will be better to set these combs under or over a strong colony first to get the bees to clean them up. If too dirty the combless bees may desert.

Pure Honey

Some persons in my community are still ignorant on the honey question, and say it looks too much like manufactured to be pure. A honey sign that I had printed runs as follows:

PURE HONEY
Produced and sold here.

I was told that they could have me arrested for printing *pure* on it. What do you say? In my opinion they cannot. What is *honey* if it isn't *pure*?

My apiary is open to inspection. My honey is open to analysis. There is $100 for any one finding my honey not pure and sanitary, and not made by the bees. What do you say about this? ILLINOIS.

ANSWER.—If you are selling the honey that the bees gather from the flowers as pure honey, it is pure foolishness for any one to say you can be put up for advertising it as such, either in a newspaper or on a signboard.

Taking Bees from a Bee Tree

I am inexperienced in keeping bees, but have some bee trees on my place along the Bellefourche river. There are bees in cottonwood trees near here.

1. Can I take the worker-bees from a tree with a bee-escape by placing a new hive near by for them to enter?

2. If done in June will the young bees left in the tree with the old queen build up another colony?

3. How soon could I move the hive with the bees to another place two miles away?

4. Please give the best method of taking the bees where the trees can be cut.

5. What is the best method of taking the bees if my method will not work? I wish to try and get a start of bees from these bee trees.

6. Does smoke destroy bees? Last summer, in a large cottonwood tree near by, was what seemed to be a very strong colony working well. Later in the season I noticed a snake curled up in the hole where the bees had been, but they were all gone. The bees from another large tree not far from this one also disappeared. If the snake took the bees would they leave any honey in the tree? SOUTH DAKOTA.

ANSWERS.—1. You might succeeed, but you would have only field bees, which are not the very best for building up a colony?

2. Yes, if the colony is at all strong it will soon recover from the taking away of its field force.

3. You could move it just as soon as all the field bees were trapped out, which would probably be in two or three days.

4. It is a matter of gumption more than of fixed rule. Cut down your tree so as to smash the combs as little as possible; cut off above and below where the bees are, and then you have much the same as a colony in a box-hive.

5. I don't know enough to give you any satisfactory way of getting the bees without cutting the tree. If any one does, he can have the floor. [If the colony is in a part of the tree trunk where it can be easily reached, you may drive them out by cutting a good-sized hole above the hollow where the bees are and one below. Then drive them out by using smoke at the lower hole After that you may do as you like with the combs. The driven bees will probably cluster near by and you may hive them like a swarm.—EDITOR.]

6. I have seen snakes in bee-hives, but I doubt their doing any harm to the bees. *If* the snake should take the bees, my guess would be that he would not take the honey.

Untested Queen—Observation Hive—Frame Spacing

1. Is wild raspberry a good honey yielding plant?
2. Is an untested queen mated?
3. What would be the best way to start a one-frame observation hive?
4. How often, and what is the best way to renew a one-frame observation hive? Would it be all right to give the bees a new frame with foundation in it?
5. Could I take two frames and place one above the other in an observation hive to give the queen more laying room?
6. Should the bottom-board be painted all over, that is on the inside also, or would the paint affect the bees?
7. My bees are located about one-half mile east of Lake Michigan. Would the bees gather more honey if they were a couple of miles farther east?
8. Are there any frames that space 1⅛ inches from center to center? MICHIGAN.

ANSWERS.—1. Excellent.

2. Yes, and she has begun laying, but her bees have not yet hatched out.

3. Take a frame of brood with queen and adhering bees and put it in the hive, brushing into it also the bees from another frame. Fasten the entrance for two or three days, so the bees cannot return to their old home, and if it is hot it is better to put the hive in a cool cellar until time to open the entrance.

4. There is no need of any renewal so long as there are neither too few nor too many bees to cover properly the frame. There is some danger of the bees absconding if you should give a frame of foundation, but if the bees become too strong you could give a frame with very little brood in it. If they become too weak, exchange their comb for one containing more sealed brood.

5. Yes.

6. It is not usual to paint the inside, but it would not hurt the bees.

7. Like enough they would, if the honey plants are equally distributed over the land.

8. Thousands of frames are so spaced.

Royal Jelly—Robbing—Beekeeping Schools—Location

1. What is royal jelly?
2. Does a young queen always emerge from the cell before the old queen leaves with a swarm, and does the queen lead a swarm or come out behind and drive the swarm out?
3. What is the best way to unite bees, in the parent hive to prevent them from swarming again after they have just swarmed or just when they are preparing to swarm?
4. In speaking about the bottom-board in the May issue in your answers, what do you mean by bottom rack?
5. I went to my apiary a few days ago and found my bees were robbing one of my colonies of bees. I looked on top of the hive that was being robbed and found a queen. Do queens ever leave the hive after they have mated except when they swarm, or is this a rare thing?
6. Is there any way of telling the age of a queen by looking at her?
7. What would it cost me to join the State Beekeepers' Association of Illinois or the National Beekeepers' Association, and of what use are they?
8. If a swarm of bees goes over in my neighbor's orchard, am I allowed according to to law to hive the swarm?
9. Are there any schools that I could attend to learn more about beekeeping, and if so which one would be the nearest and best for me to have had some experience in beekeeping?
10. Which one of the three Pacific States is the best for beekeeping, Washington, Oregon or California, and in what part? ILLINOIS.

ANSWERS.—1. Royal jelly is the cream-like food the nurse-bees feed to the larvæ in queen-cells for about five days, from the time the larva hatches out of the egg until it is sealed over.

2. The old queen leaves with the swarm a week or so before the first virgin queen emerges, and she may be among the first or the last, or anywhere in the middle of the swarm.

3. You can return the swarm and kill the old queen and destroy all queen-cells but one.

4. It is what its name implies, a small rack that prevents the bees from building down comb, and yet allows much ventilation. You will find it fully described in "Fifty Years Among the Bees."

5. A laying queen is never supposed to leave the hive except with a swarm. Your finding a queen on top of the hive was an unusual occurrence. It is possible that the colony was overcome by the robbers, in a badly demoralized condition, and that the queen rushed out of the hive with the bees. And maybe that wasn't the case at all.

6. No, although as you become experienced you will see a difference in the appearance of an old and a young queen. The difference is hard to describe; but I might say the young queen is fresher looking, perhaps because of fuller plumage.

7. By paying $1 00 you can become a member of the State Association, and by paying $1.00 you can be a member of the State and the National Association. By becoming a member you receive a valuable yearly report; you are shoulder to shoulder with other beekeepers in using an influence to obtain advantages from the State and federal government that could not be obtained without organized effort. If freight rates on honey are unjust, no amount of effort on your part individually will have any effect toward righting it, but they may listen to an association of beekeepers, and the addition of your name to swell the membership will increase the influence of the association.

8. Yes, and if you do any damage by it you must pay for it.

9. The subject is taught at the Agricultural College at Ames, Iowa, in charge of an excellent man, Prof, F. Eric Millen.

10. More honey is produced in California, but there are good locations in the other two. Imperial Valley, Calif., is one of the best localities, but a poor place for you if you are looking for a new locality, as the ground is fully occupied.

Selling Other Peoples' Honey

1. Would it be lawful for one to buy honey in the market, re-label it with one's own labels and sell it to consumers locally?
2. Or simply destroy the original label and sell without label to local consumers? MISSOURI.

ANSWERS.—1. I don't suppose you would be likely to get into any legal trouble; but if your label reads "Produced by" there is a possibility of it. At any rate it would hardly be good business policy.

2. There could be no trouble from that.

Fertilizing Queens

I recently picked up a copy of Mr. Frank C. Pellett's book on beekeeping, and noticed therein a statement that Prof. Francis Jager, of Minnesota, has published in some issue of the magazine "Science," an account of his successfully fertilizing a queen bee in confinement. Would you kindly give me a brief description of the means used by Prof. Jager. WASHINGTON.

ANSWER.—I have no information as to particulars, and have not been very much interested in the matter, for in private conversation with Prof. Jager I understood that it was hardly a thing for common use.

Paralysis.

I have 40 colonies of bees and some of them are affected with a mania or disease to kill. I would like to have some advice on this. They act exactly as a strong colony would if attacked by persistent robbers, only there is no excitement, there being at all times several hundred dead bees in or near the entrance to the hive.

This commences in April and continues all summer. On cold or rainy days, when there is no flight the killing goes on just the same, the entrance sometimes becoming nearly full of dead bees, and on other days there is at all times two or three bunches fighting on or near the entrance, with dead and dying bees scattered all about.

Have just two colonies affected this season so far, and there were two last season. Of those last season I tried requeening with no success towards curing the disease, and then late in the season I united one of them with a queenright wild swarm, and they are apparently all right this year; the other died in midwinter with plenty of sealed honey still in the hive.

The brood and young bees are in nowise affected; it being all mature bees that are affected. KANSAS.

ANSWER.—Looks a good deal like paralysis. If it is, the affected bees have a trembling motion, perhaps shiny in appearance, and the other bees seem to be pulling and dragging to get them out of the hive. As far north as you are the disease is not likely to amount to much, disappearing of itself. I am sorry to say I know of no sure cure for it, although many cures have been offered.

Cyprians—Re-Stocking

1. I have one colony of pure Cyprian bees Would you advise stocking up with them?
2. Are black and Italian bees crossed as good producers of honey as pure Italians or goldens?
3. Last spring I lost one colony of bees; they had plenty of honey, were sheltered from north winds, and did not have foulbrood nor black brood. Can you tell what was the cause?
4. Would an untested queen and a quart of bees make a strong colony in a good season?
5. Why are the Cyprians great for swarming?
6. What kind of a bee would you advise to stock up with? IOWA.

ANSWERS.—1. Cyprians have the reputation of being the crossest bees ever brought into this country. If your bees live up to that specification it will be advisable to change the blood.

2. The first cross may be as good as the pure stock, and in some cases better; but after the first cross there is deterioration, and the bees become poor.

3. I don't know. Might be a bad queen, or any one of a number of things.

4. Yes, if started as early as June.

5. I don't know; I didn't know they were specially noted as great swarmers, although they are noted as building a large number of queen-cells.

6. Probably Italians would be as good as any.

Rearing Queens.

I am trying to rear queens for my own use, but have had bad luck. Can you you tell me why I fail. I take a strong colony and have them queenless for four days, then I give them grafted cells to work on. When the cells have been sealed one or two days I transfer them to a wire cage and hang them in a big frame to hatch. The trouble is they don't all hatch at once and they die in a day or two. I always have candy in one corner of the cage. What is my trouble? SUBSCRIBER.

ANSWER.—You say you transfer cell to cage when the cell has been sealed one or two days. It is not well to cage a cell so soon. Leave it in care of the bees just as long as possible. The object of caging is so that there will be no chance for the first virgin that hatches to tear open the other cells. So there is no need to cage a cell until within a day or so of hatching. Then they will be more vigorous and likely to live. If I understand correctly, the young queens die in the cage when only a day or two old. I am not certain why that is, if they are vigorous, unless it be that they are caged in a

part of the hive where they are not kept warm enough. They should be in the warmest part of the hive, in the center of the brood-nest, or in the upper story over a strong colony.

If you see to this, and if the cells from start to finish have been in the care of a strong force of bees, I know of no reason why the young queens should not generally live in their cages for a week or more, although it is always well to have each virgin given to her own nucleus or colony just as soon as convenient.

Young Queens Ten-Frame Hive—Increase

1. Today (June 13) I transferred a colony of bees from a box-hive to a standard movable frame hive. For two weeks previous to this I could hear queens calling to each other and so expected a swarm, but after watching for two weeks and no swarm, I transferred them. I found eight or ten queen-cells, but all but two had hatched. What became of the queens?
2. Why did they not swarm? I saw no eggs in the combs when I was transferring them.
3. Why were there no eggs?
4. What are your reasons for giving preference to 10-frame hives?
5. What is the simplest and most profitable method of increase?
6. What do you consider the safest and most certain way of introducing queens?

KANSAS

ANSWERS.—1. As you heard queens piping and quahking it must be that the old queen was gone and virgins were present. As the bees did not swarm the virgins fought to a finish as fast as they emerged, and only one would be left.

2. Probably the weather was so adverse, or so little honey coming in, that they were discouraged from swarming. [Perhaps they swarmed and you did not see them.—ED.]

3. The old queen was in some way gone, and the young queen had not yet begun to lay.

The chief reason is that the larger hive gives chance for a stronger colony, with ordinary attention, and allows more stores to guard against starvation in winter.

5. For one with very little knowledge of bees perhaps nothing is better than natural swarming. One who has informed himself by careful study of his bee-book can tell better than I can which method of artificial increase is better for him.

6. The most safe and certain way I know of is as follows: Find three, four or more combs well filled with brood and put them in an upper story over an excluder on the hive of a strong colony. About eight days later, when all the brood is sealed, put a piece of wire-cloth over a strong colony and place on this an empty hive-body. Put in this hive-body your frames of sealed brood, but be very careful to brush every bee from these frames Put in the queen and cover up tight. There will be no bee but the queen in this story, but at once young bees will be emerging from their cells, the heat will arise from the colony through the wire-cloth, and in short time the queen will have quite a number of attendants that have never known any other queen, and of course will be friendly. Five days later set the story on a new stand, and allow a small entrance. In a short time you will likely see these 5-day-old bees bringing in pollen, although under ordinary circumstances bees do not carry pollen until two weeks old or older.

Putting on Supers—Late Swarms—Inspector

1. Is it harmful to place two supers on a hive at the beginning of the honey crop? If one is only put on when should the rest be put on?
2. Can one put the supers on too early? Would there be any harm done if they were put on say about May 1?
3. Does it pay to produce honey in extracting frames instead of sections for one's own use?
4. I have read that late natural swarms should be returned to the parent hive 24 hours after hiving them. How is this done?
5. What is the best material to use in a smoker?
6. If one has two sources of honey crop coming at different times, should the supers with the first honey crop be taken off and others put on for the second crop?

ANSWERS.—1. The only harm that can come from it is that it takes extra heat to keep the extra super warm. The usual way is to put one on, and when that is about half filled, or at least well started, to put a second one under the first.

2. Yes, it does at least a little harm to give supers much before they are needed, for keeping warm the extra room retards building up. But it is still worse to be too late. A good rule in your locality is to give the first super as soon as you see the very first clover bloom.

3. That depends. If you are willing to pay considerable for something to make a nice show on the table when company comes, or for the little extra flavor in comb honey, then have sections. For every day use in the home, take extracted because you get more of it.

4. Put the swarm in a dark cellar for 24 hours, then dump it down in front of the old hive just as you would in hiving an ordinary swarm.

5. It is chiefly a matter of convenience. I don't think I have ever found anything better than hard wood cut into pieces about half an inch square; but I haven't used it for years because other things are more convenient. Just now I am using oak bark because it happens to be easily gotten. Next year it may be cotton rags, oily cotton waste or something else. Anything that gives a good smoke doesn't go out easily, and lasts well.

6. Yes, if the two kinds of honey are of different values, as when buckwheat fol low clover.

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Crop Reports and Market Conditions

For our August issue we asked the following questions of reporters:

1. How large is the honey crop compared to last year?
2. What are the prospects for the rest of the season compared to last year?
3. Is honey in good demand? Is it being sold as fast as harvested? What prices are being obtained, wholesale and retail?
4. Has the tin can shortage affected the honey situation? Will it stimulate local sales by beekeepers?

THE HONEY CROP

As intimated before on this page, the honey flow was extremely late this year, owing to the backward season, so that instead of harvesting in the middle of July, many northern beekeepers are just at the beginning of the flow.

In New England and the East, generally, crop prospects are about the equal, if not a little better than last year. In the central west, however, the situation is from poor to serious. Some few localities report from 50 to 100% of last year, but most report either a total failure or only a very small proportion of last year's crop. In our own locality colonies which already had near 150 pounds of honey harvested, at this time last year, have nothing in the supers and nothing in sight.

Michigan and Wisconsin report backward weather and generally a short crop. Minnesota seems to have fared a little better. Iowa, Illinois, Indiana, Missouri, Kansas, Nebraska and other Central States are way below normal. Beekeepers in these states will need to import honey to supply the home demand, if they can get it.

Georgia and Florida have had a crop much better than a year ago. Practically all honey harvested has been sold and delivered on a basis of about 10 cents for extracted. Alabama and Mississippi are still waiting on sweet clover, with a very short crop in prospect.

Texas estimates run all the way from less than nothing to 40% of last year's crop. The northern and western parts of this state seem to have fared better than the southern, where many bees are starving.

In Colorado, Idaho and Montana the crop is now on. It promises to be good, probably in excess of 1916, as the flow was a failure in Idaho, especially in 1916.

California and the Coast are hardly up to the last season, though many reports claim as low as 50% of last year's crop. In restricted areas there have recently been large losses from forest fires and excessive heat.

PROSPECTS

Recent rains in some parts of Texas have increased the chances for later crops there. In the southeast the later crop may be normal. Rains in the central region will almost assure a fair crop wherever heartsease and Spanish needle are available. On the whole, later crop prospects will hardly come up to those of last season.

HONEY DEMAND AND SALES

Probably not since the civil war has there been such an enormous demand for honey. As fast as honey is being offered it is being "gobbled up" either by the big jobber or by the small consumer. Sales are very easily made now on a basis of 10 cents for extracted and not a few have been reported as high as 12½ cents. This is in a wholesale way. One beekeeper has contracted a carload of alfalfa extracted at 11¼ cents f. o. b. Denver.

More honey than ever before has been contracted ahead, leaving probably a minor proportion to be sold after harvest. This holds true, especially, of the big producing areas of the west. One large bottling firm, we understand, is circulating broadcast offers of 8½ cents for this season's extracting. Most offers, however, range from 9½ to 12 cents, depending on the quality of the honey.

The beekeeper who sells his honey at home or by mail is getting more inquiries than he will likely be able to fill. One of these has set a price for consumers of $1.25 for a 5-pound can; $2.00 for a 10-pound can, and $18.00 for two sixty-pound cans. He reports as many sales as last year. Will his prices not be too low, if he expects to supply his trade throughout the winter?

THE TIN CAN SHORTAGE

Generally speaking, the tin can shortage has not prevented the sale of the honey crop, as many of the larger producers were supplied before the shortage became evident. In the west cases of two sixty-pound cans are selling at $1.15 to $1.35. Friction top pails are still to be had and at prices not above the proportion of rise in other commodities. Glass jars for a while were unobtainable, but the situation is now much easier.

Some big producers who usually sold some locally will not do so on account of the favorable prices in quantities, but on the whole the local sales are very large proportionately and should continue so.

SUMMARY

The crop this year can hardly equal last year, while the demand is much greater than it was at the same date in 1916. We do not see how prices can drop any below the present level. Nor do we understand how an advance can be avoided. Beekeepers for years have insisted on the food value of honey. Are the prices yet anywhere near the level they should be to correspond with other foods?

No movements of comb honey are as yet reported. However, the price on this also is bound to be advanced by the high price of extracted. Old stocks are cleaned up. New stocks should realize from 50c to $1.00 a case more than a year ago.

HONEY AND BEESWAX

KANSAS CITY, Mo., July 17, 1917.—Your letter to hand and in reply will say that the market on comb honey here is around $3.65 per 24 section case for strictly No. 1. Very little extracted honey on the market.

Hardly know what the trade will pay for same, but find a few offerings from the west at from 11 to 12 cents a pound f. o. b. Kansas City. Beeswax, strictly No. 1, is 40 cents per pound. C. C. CLEMONS BEE SUPPLY CO.

NEW YORK, July 16, 1917.—There is nothing doing at all in comb honey to speak of. Stocks are well exhausted and what little there is left on the market is dragging; prices range from 10c to 14c per pound, according to quality.

The market on extracted honey is very much unsettled, and prices are fluctuating. California new crop is quoted at from 9¾ to 11c for light amber, 12 to 14c for white, and we are informed that sales of fancy white have been made at as high as 15c per pound f. o. b. Coast. Receipts of West Indian honey are normal and uncertain at this time of the year, but find ready sale at from $1.10 to $1.20 per gallon, and exceptionally fine lots at even higher figure It is too early to say, at this date, what the crop in the East and Middle West wi'l be, but as bees were in good condition in the spring, a good average crop should be produced. HILDRETH & SEGELKEN.

SAN ANTONIO, July 14, 1917.—Only a few offerings of honey are being made and these in limited quantities. No considerable movement will be felt until the cotton surplus is harvested, about September 1. Prices are a little weaker, ranging about 9c for amber to 12c for white. Bulk comb, very scarce at 12c to 15c. Beeswax, 30c cash and 32c exchange.

SOUTHWESTERN BEE CO.

CHICAGO, July 16, 1917.—At this writing none of the new crop of honey has appeared on the market with the exception of a few cases of extracted from Minnesota that is little better than sweet water. What it was gathered from we do not know. At this writing it has not been sold, it having been rejected for the reason given.

What little white extracted honey that has come on the market during the past month has sold at about 14c per pound, without any amber from which to quote.

Advices now coming would indicate that before the month closes there will be honey from nearby sections and the same should meet with a ready sale, for the market is entirely free from offerings of the preceding crops, or that gathered in 1915 and 1916.

Beeswax is ranging from 35c to 40c per lb., according to color and cleanliness.

R. A. BURNETT & CO.

DENVER, July 21 .1917.—We herewith send you market report for the August number of your journal:

A few cases new crop comb honey coming in now, which sell in a local way at $4.50 for No. 1 white and $4.00 for No. 2 white. Crop promises to be light. White extracted sells wholesale at 16c, no light amber or amber available yet.

We pay 36 cents in cash and 38 cents in trade for clean yellow beeswax, delivered here.

THE COLORADO HONEY PRODUCERS' ASSN.

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¶ We can now furnish Friction Top Cans and Pails at the following prices, f. o. b. Chicago; Keokuk, Iowa; or Hamilton, Illinois ---

2-lb- Cans in crates of 612, per crate	$26.75
2½-lb. Cans in crates of 450, per crate	22.50
2½-lb. Cans in cases of 12, per case	1.40
5-lb. Pails in crates of 200, per crate	16.00
5-lb. Pails in crates of 100, per crate	8.25
5-lb. Pails in cases of 12, per case	1.20
10-lb. Pails in crates of 100, per crate	12.50
10-lb. Pails in cases of 6, per case	.95

¶ The above prices are low, considering the present prices of tin plate. Send in your orders at once.

DADANT & SONS, Hamilton, Ill.

Your Perplexing Question

What was it this year? Did your bees swarm too much? Has your honey soured? Are your drones black, and why? Are you troubled with foulbrood? Wouldn't the bees work in the supers? Do you want to raise queens for your own use?

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By DR. C. C. MILLER

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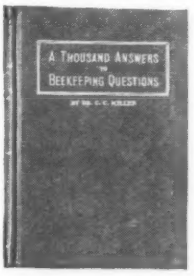

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"I have tried queens from several different places and like yours best of all."—C. O. BOARD, Alabama, N. Y.
"We are only one mile from Lake Erie and exposed to high cold winds; in fact, this is the windiest place along the great lakes. Your bees were able to stand the winter with only an insignificant loss, and we would have no others. As for honey they averaged 175 pounds of extracted surplus, did not swarm, and gave an artificial increase of 30 percent, which is as fine a record as can be had in this locality, especially when the work is done entirely by amateurs." Name furnished on request. North East, Pa.

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Untested	50c each $45 per 100	Tested	$1.00 each, $ 00 per 100
Select untested	65c " 50 per 100	Select tested	1 25 " 110 per 100

We guarantee safe arrival of all Queens—that they are very resistant to European Foulbrood, and, in fact, will give complete satisfaction. Wings clipped free of charge. Our capacity is 1500 Queens monthly

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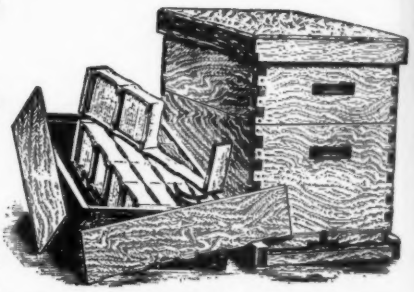

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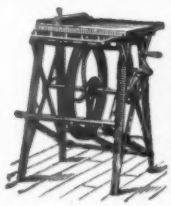

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I recently bought several hundred dollars worth of hives for my personal use from a firm which has never offered anything in cypress. I insisted on cypress bottoms and they had to be made especially to fill my order. I feel very sure that the use of cypress for bee hives, hive bottoms and hive stands will very largely increase as beekeepers learn more of the non-rot qualities of the all-heart wood of this species, which should be specified in all cases.

Trusting that the above facts may be the means of saving you many future replacements, I am

Very truly yours,"
(Signed)

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